Tetrahedron Letters

The International Journal for the Rapid Publication of Preliminary Communications in Organic Chemistry

Founded jointly by Sir Robert Robinson and R. B. Woodward
Chairman of the executive board of editors for Tetrahedron publications
Sir Derek Barton Texas A&M University U.S.A.

SUBJECT AND AUTHOR INDEX
NUMBERS 1-52 1996

Pergamon

TETRAHEDRON LETTERS

EXECUTIVE BOARD OF EDITORS FOR TETRAHEDRON PUBLICATIONS

Chairman: **Professor Sir Derek Barton, FRS,** Department of Chemistry, Texas A & M University, College Station, TX 77843-3255, USA (FAX: 1 409 845 7177)

Professor J. E. Baldwin, FRS, Dyson Perrins Laboratory, Oxford, OX1 3QY, UK
(FAX: 44 1865 275632)

Professor D. L. Boger, Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, USA
(FAX: 1 619 784 7550)

Professor S. G. Davies, Dyson Perrins Laboratory, Oxford, OX1 3QY, UK
(FAX: 44 1865 275633)

Professor L. Ghosez, Laboratoire de Chimie Organique de Synthèse, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium
(FAX: 32 10 47 29 44)

Professor A. R. Katritzky, FRS, Department of Chemistry, University of Florida, Gainesville, FL 32611, USA
(FAX: 1 352 392 9199)

Professor N. K. Kochetkov, N. D. Zelinsky Institute of Organic Chemistry, Academy of Sciences, Moscow B-334, Russia
(FAX: 7 095 13 55 328)

Professor Lin Guo-Qiang, Shanghai Institute of Organic Chemistry, Academia Sinica, Shanghai 200032, China
(FAX: 86 21 64166263)

Professor S. F. Martin, Department of Chemistry and Biochemistry, University of Texas, Austin, TX 78712, USA
(FAX: 1 512 471 4180)

Professor A. McKillop, University of East Anglia, School of Chemical Sciences, University Plain, Norwich, NR4 7TJ, UK
(FAX: 44 1603 507773)

Professor W. B. Motherwell, Department of Chemistry, University College, 20 Gordon Street, London WC1H 0AJ, UK
(FAX: 44 171 380 7463)

Professor G. Ourisson, Centre National de la Recherche Scientifique, Centre de Neurochimie, 67084 Strasbourg, Cedex, France
(FAX: 33 3 88 607620)
(Associate Editor, Professor G. Solladié)

Professor G. H. Posner, Department of Chemistry, Johns Hopkins University, Baltimore, MD 21218, USA
(FAX: 1 410 516 8420)

Professor T. Shioiri, Faculty of Pharmaceutical Sciences, Nagoya City University, Tanabe-dori, Mizuho-ku, Nagoya 467, Japan
(FAX: 81 52 834 4172)

Professor W. Steglich, Institut für Organische Chemie der Universität München, Karlstr. 23, D-80333 München, Germany
(FAX: 49 89 5469225)

Professor H. H. Wasserman, Department of Chemistry, Yale University, PO Box 208107, New Haven, CT 06520-8107, USA
(FAX: 1 203 432 9990)
(Associate Editor, Professor D. P. Curran)

Professor C.-H. Wong, Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, USA
(FAX: 1 619 784 7550)

Professor Y. Yamamoto, Department of Chemistry, Faculty of Science, Tohoku University, Sendai 980-77, Japan
(FAX: 81 22 217 6784)
(Associate Editor, Professor M. Hirama)

Editor Tetrahedron Organic Chemistry Series: **Professor J. E. Baldwin, FRS,** Dyson Perrins Laboratory, Oxford, OX1 3QY, UK

BOARD OF CONSULTING EDITORS

F. Arcamone, Milan
J.-E. Bäckvall, Uppsala
A. G. M. Barrett, London
R. G. Bergman, Berkeley, CA
R. Breslow, New York, NY
H. C. Brown, Lafayette, IN
E. J. Corey, Cambridge, MA
S. J. Danishefsky, New York, NY
P. B. Dervan, Pasadena, CA
P. Deslongchamps, Sherbrooke
A. Dondoni, Ferrara
J. Elguero, Madrid
D. A. Evans, Cambridge, MA
B. Giese, Basel
S. Hanessian, Montreal
S. Ito, Tokushima
J.-M. Lehn, Strasbourg
S. V. Ley, Cambridge
X. T. Liang, Beijing
X. Lu, Shanghai
P. D. Magnus, Austin, TX
M. Makosza, Warsaw
L. N. Mander, Canberra
S. Masamune, Cambridge, MA
F. Mathey, Palaiseau
G. Mehta, Hyderabad
A. I. Meyers, Fort Collins, CO
K. Mori, Tokyo
T. Mukaiyama, Tokyo
T. Nakai, Tokyo
K. Nakanishi, New York, NY
K. C. Nicolaou, La Jolla, CA
T. Norin, Stockholm
R. Noyori, Nagoya
S. Nozoe, Sendai
S. Omura, Tokyo
L. E. Overman, Irvine, CA
P. Potier, Gif-sur-Yvette
J. Rebek, Jr, Cambridge, MA
W. R. Roush, Bloomington, IN
S. L. Schreiber, Cambridge, MA
A. I. Scott, College Station, TX
A. Shanzer, Rehovot
K. B. Sharpless, La Jolla, CA
A. B. Smith, III, Philadelphia, PA
G. Stork, New York, NY
W. Tochtermann, Kiel
B. M. Trost, Stanford, CA
G. L. Verdine, Cambridge, MA
P. von Ragué Schleyer, Erlangen
Y. Wang, Shanghai
K. B. Wiberg, New Haven, CT
E. Winterfeldt, Hannover
O. Yonemitsu, Okayama
N. S. Zefirov, Moscow

Supplement to Tetrahedron Letters

Subscription Rates

Annual Institutional Subscription Rates 1997: Europe, The CIS and Japan 11089.00 NLG. All other countries US$6845.00. NLG prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice. Any enquiry relating to subscriptions should be sent to:
The Americas: Elsevier Science, Customer Support Department, PO Box 945, New York, NY 10010, USA [Tel: (+1) 212-633-3730/1-888 4ES-INFO. Fax: (+1) 212-633-3680. E-mail: usinfo-f@elsevier.com].
Japan: Elsevier Science, Customer Support Department, 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106, Japan [Tel: (+81) 3-5561-5033. Fax: (+81) 3-5561-5047. E-mail: kyf04035@niftyserve.or.jp].
Asia Pacific (*excluding Japan*): Elsevier Science (Singapore) Pte Ltd, No. 1 Temasek Avenue, 17-01 Millenia Tower, Singapore 039192 [Tel: (+65) 434-3727. Fax: (+65) 337-2230. E-mail: asiainfo@elsevier.com.sg].
Rest of the World: Elsevier Science Customer Service Department, PO Box 211, 1001 AE Amsterdam, The Netherlands [Tel: (+31) 20-485-3757. Fax: (+31) 20-485-3432. E-mail: nlinfo-f@elsevier.nl].

Copyright © 1997 Elsevier Science Ltd

TETRAHEDRON LETTERS

The International Journal for the Rapid Publication of Preliminary Communications in Organic Chemistry

Chairman of the Executive Board of Editors for Tetrahedron Publications

Professor Sir Derek Barton, FRS

PERGAMON

Publishing and Advertising Office:
Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB (Tel: (01865) 843000; Fax: (01865) 843010).

Periodicals Postage Paid at Rahway, NJ and additional entry points. Tetrahedron Letters (ISSN 0040-4039) is published weekly January to December in one volume, by Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. The annual subscription in the USA is $6845.00. Tetrahedron Letters is distributed by Mercury Airfreight International Ltd, 2323 Randolph Avenue, Avenel, NJ 07001-2413. Postmaster: please send address corrections to Tetrahedron Letters, c/o Elsevier Science, RSO, Customer Support Department, 655 Avenue of the Americas, New York, NY 10010, USA [Tel: (+1) 212-633-3730/1-888 4ES-INFO. Fax: (+1) 212-633-3680. E-mail: usinfo-f@elsevier.com].

Microform and Back Issues
Back issues of all previously published volumes, in both hard copy and on microform, are available direct from Elsevier Science offices.

Copyright © 1997 Elsevier Science Ltd. All rights reserved
This journal and the individual contributions contained in it are protected by the copyright of Elsevier Science Ltd, and the following terms and conditions apply to their use:

Photocopying
Single photocopies of single articles may be made for personal use as allowed by national copyright laws. Permission of the publisher and payment of a fee is required for all other photocopying, including multiple or systematic copying, copying for advertising or promotional purposes, resale, and all forms of document delivery. Special rates are available for educational institutions that wish to make photocopies for non-profit educational classroom use.

In the USA, users may clear permissions and make payment through the Copyright Clearance Center Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. In the UK, users may clear permissions and make payment through the Copyright Licensing Agency Rapid Clearance Service (CLARCS), 90 Tottenham Court Road, London W1P 9HE. In other countries where a local copyright clearance centre exists, please contact it for information on required permissions and payments.

Derivative Works
Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the publisher is required for resale or distribution outside the institution.

Permission of the publisher is required for all other derivative works, including compilations and translations.

Electronic Storage
Permission of the publisher is required to store electronically any material contained in this journal, including any article or part of an article. Contact the publisher at the address indicated.

Except as outlined above, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the publisher.

Notice
No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein.

Although all advertising material is expected to conform to ethical (medical) standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

♻™ The text paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials. ANSI Z39.48-1984.

The Item-Fee Code for this publication is: 0040-4039/97 $17.00 + 0.00

Subject Index 1996

Corrigenda to previous volumes

Cooper M. A., Ward A. D.: **36**, 2327 (1995): correction to structure 4 in Table 1, 4827

Khadilkar B.M., Gaikar V.G., Chitnavis A.A.: **36**, 8083 (1995): added reference on page 8084 to other work in the same area, 1719

Kim B.H., Chung Y.J., Ryu E.J.: **34**, 8465 (1993): TBDMS in both isosteric compounds in Table 1, entry 8, replaced by H, 139

Lane S.J., Marshall P.S., Upton R.J., Ratledge C., Ewing M.: **36**, 4129 (1995): correction to structure of Figure 1, 1

Nair V., Kumar S., Williard P.G.: 1995, **36**, 1605: addition of reference to work by W. Friedrichsen *et al.*, 2315

Page P.C.B., Heer J.P., Bethell D., Collington E.W., Andrews D.M.: **35**, 9629 (1994): correction to absolute configuration on page 9630, 2515

Reginato G., Mordini A., Degl'Innocenti A., Caracciolo M.: **36**, 8275 (1995): corrections to $[\alpha]^{20}_D$'s of **3a**, **3b** and **3i**, 1325

Subramanyam C.: 1995, **36**, 9249: correction of structure **7a-c**, 2315

Voyer N., Roby J.: 1995, **36**, 6627: Scheme 3 on p. 6628 corrected to give reagents in order, 3415

Xiang Y., Chen J., Schinazi R. F., Khao K: **36**, 7193 (1995): corrections to structure numbering 3779

Acetals

AB-spiroacetal subunit of spongistatin 1 (altohyrtin A), synth from 3-benzyloxypropanal, 8581

acyclic di- and tripeptide hemiacetals, synth by reaction of di- and tripeptide aldehydes with methanol, 2517

2-alkyl quinone monoketal, annulation of heterocyclic rings onto–, potential for alkaloid synth, 2881

γ-amino α,β-unsaturated dimethyl acetals as direct precursors of (*E*)-1-methoxy-2-methylamino-1,3-butadiene and the corresponding bisdienes, subsequent Diels-Alder reactions of, 8169

benzylidene and ethylidene acetals as protecting groups in oxidative functionalisation of positions 1, 2, 9 and 10 of 5-*O*-cinnamoyltaxicine I, 9189

cyclic acetals, synth by treatment of t-butyldimethylsilyl ethers with tetra-*N*-butylammonium fluoride, 2927

cyclic ketene silyl acetals, photoreaction with 2-naphthaldehyde, synth of 2-siloxy-2-alkoxyoxetanes, 5901

cyclopropanone acetal, photoinduced electron transfer reactions of – with conjugated enones in the presence of a redox-type photosensitiser, 1833

diacetal trioxa-cage compd, synth by cyclisation and subsequent methylthio group rearrangement of *endo*-thioester substituted norbornenes, 8209

dialkylstannylene acetals derived from carbohydrates, reaction with diacyl chlorides and disulfonyl chlorides in the presence of tertiary amines, synth of non-glycosidically linked oligosaccharides, 991

dimethyl acetals, triarylpyrylium salt promoted substitution reactions of with silylated nucleophiles, 7779

2,2-dimethylcyclopropanone silyl acetal, irradiation of a solution containing 1,1-dicyano-2-phenylethene or 1,2,4,5-tetracyanobenzene with – in the presence of phenanthrene, introduction of a C_3 unit, 2975

dimethylformamide dimethyl –, reaction with corticosteroid dexamethasone in which C(17)OH-$COCH_2OH$ is replaced by C(17)H-$COCO_2H$, 5365

1,7-dioxaspiro[5.5]undecane alcohols, regio- and stereo-selective reductive cleavage, 5649

dithioacetals and oxathioacetals, deblocking using periodic acid, conversion to the corresponding carbonyl compds, 4331

ene acetal prepared from 4-pentenal and chiral hydrobenzoin, starting material for synth of chiral 1,4-diols, 2245

energetics of hydrate and hemiketal formation

for highly fluorinated ketones, 9165
formaldehyde diethyl acetal for condensation of 2-propylresorcinol with formaldehyde diethyl acetal, formation and isomerisation of calix[4]-resorcinarene, calix[5]resorcinarene and calix-[6]resorcinarene, 7383
formation from aldehydes and ketones using kaolinitic clay as catalyst, 4605
free energies of hemiacetal formation in aqueous solution between alcohols and acetaldehyde, chloral, and fluoral, effect of $n \rightarrow \sigma^*$ interactions, 9279
from base-promoted reaction of phenyl salicylates with aliphatic aldehydes, 3755
fulveneketene acetal, [6+3] cycloaddition with 2-oxyallyl cation, synth of indane ring systems, 659
heptane-1,3,5,7-tetrol diacetonides, synth, conformation, 4479
hexafluoroacetone – internucleotide link in T-T analog, incorporation into oligonucleotide, 8667
ketene – by elimination from β-haloacetals using base and PT catalyst, comparison of yields using microwave and ultrasound activation, 1695
2-methoxycarbonylmethylene-1,6-dioxaspiro[4.5] decane, synth by intramolecular conjugate addition of hemiacetal alkoxides to alkynoates, 5707
mixed methyl alkyl – cleavage in synth of γ-alkoxyallyl stannanes, 3195
nor-norambracetal, compd with ambergris fragrance, synth from sclareol *via* γ-homobicyclofarnesylic alcohol, 3695
N,S- and N,Se-acetals, synth from aldehydes and primary amines for use as precursors for radical reactions, 9199
organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, acylation of, approach to BCD and BCDE rings of antitumour antibiotic fredericamycin A, 1367
ortho-condensed six- and seven-membered rings with one O atom by – condensation with allylstannanes, 2869
peroxyhemiacetals, fragmentation reactions of, stereoselective synth of 1,2-dioxolanes, 6409
4-phenylsulfonyl spiro –, Na/Hg reductive rearrangement to 5-hydroxy-1,6-dioxadecalins, 3179
photoannulation of keto-acetals by Norrish type II reaction, synth of systems related to zaragozic acid, 4883
regio- and diastereo-selective reaction of alkynylstannanes with α-stannyl mixed –, allenylcarbinol synth, 3819
Hg-sensitized dehydrodimerization of 1,3-dioxolanes, formation of monocyclic products produced by opening of one ring, 6853
spiro–, synth by photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones, 3521
6,6-spiroketal system of reveromycin A, synth and absolute configuration at C_{11},C_{12},C_{15}, C_{18} and C_{19}, 6755
stannylene acetals prepared from disubstituted vicinal diols, alkylation of with 1,2-dibromoethane to provide tetrasubstituted triethylene glycols or with 2-chloroethanol to produce disubstituted triethylene glycols, 433
transacetalization for synth of tartaramide acetals of allylic aldehydes in DMF, 7197
1,6,8-trioxadispiro[4.1.5.3]pentadecanes, synth from D-galactopyranose involving intramolecular hydrogen abstraction reactions promoted by alkoxy radicals, 6021
unsaturated hydroperoxyacetals and -ketals, electrophilic cyclisation of, synth of 1,2-dioxanes, 1,2,4-trioxanes and 1,2,4-trioxepanes, 463
zooxanthellatoxin A, absolute configuration of spiroacetal portion, 7267
see also Acylals, Aminals, Dioxolans, Seleno-acetals, Thioacetals

Acetogenins
15-*epi*-annonin I, Annonaceous acetogenins, synth *via* Sharpless epoxidation, 7001
blepharocalyxins A and B, diarylheptanoids from *Alpinia blepharocalyx*, structures, 7283
colletofragarones A1 and A2, conidial germination self-inhibitors of fungus *Colletotrichum fragariae*, structure, 5731, corrig. 8823
(15*S*,16*R*,19*S*,20*R*,34*S*)-diepomuricanin, annonaceous –, synth, 5393
gigantransenins A-C, mono-THF acetogenins bearing *trans* double bonds, isolation from the bark of *Goniothalamus giganteus*, structures, 5449
(-)-goniofupyrone, furano[3,2-*b*]pyran-5-one deriv, synth and absolute configuration, 5389
lagunapyrones A-C, cytotoxic acetogenins from unidentified marine sediment bacterium, structures, 1327
muridienins 1 and 2, annonaceous –, biogenetic missing links, isolation from *Annona muricata*, 9301
(+)-squamostanal-A, Annonaceous –, synth, 1593
α,β-unsaturated γ-methyl-γ-lactone of the Annonaceous acetogenins, absolute configration by enzymatic method, 7043

Acetylenes
see Alkynes
Acidity
relative – of H(2) of 1,3-azolium salts, calculations, 149
Acridines
10-carboxymethylacridinium derivs: synth of an acridinium ester with an antibody binding group at N-10 on the acridine ring and alkylation of N-10 using a trifluoromethanesulfonate ester, 8519
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, complexation with cyclodextrins, no distinction between host and guest, 7433
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, complexation of hydrocarbons by dimer, 8451
imidazole-acridine conjugates as mimics of ribonuclease A, 4417
oligo-nucleotides covalently linked to acridine at artificial abasic site, influence of linker length and base sequence, 4983
sagitol, a pyridoacridine alkaloid from the deep water sponge *Oceanapia sagittaria*, structure, 9147
Acylation
acyl disulfide-mediated intramolecular – for orthogonal coupling between unprotected peptide segments, mechanism and application, 933
β-acylation of α-methylbutanamide, synth of *syn*- and *anti*-diastereoisomers of 4-aryl-2,3-dimethyl-4-oxobutanamides, 1045
of alkyl hydrogen(acylamino)malonates *via* the $MgCl_2/R_3N$ base system, synth of α-acylamino-β-keto-esters, 3303
of B15C5 crown ether with AcCl and copper-clay based catalysts, 1473
of diethyl(ethoxycarbonyl)fluoromethylphosphonate using magnesium chloride-triethylamine, synth of α-fluoro β-keto esters, 653
intermolecular acylation of phosphine oxides using chiral phosphine oxides and chiral esters, 7465
intramolecular – of γ-benzyloxy phosphine oxides with LDA, synth of optically active cyclopropyl ketones, 1501
methyl aryl ethers, trifluoroacetylation using TFAA with $CoCl_2$ catalysis, 4511
nonenzymatic enantioselective acylation of racemic secondary alcohols catalysed by a SnX_2-chiral diamine complex, 8543
phenols, direct C– by carboxylic acids using catalytic $Hf(OTf)_4$, 4183
C– of phenols using acid chlorides and $Hf(OTf)_4$, 2053
reversible – of 3-alkyl-1-(phenylsulfonyl)pyrroles, synth of 2,3- and 2,5-disubstituted pyrroles, 1523
sulfenate ester reaction with acyl chlorides, formation of sulfenyl chlorides and carboxylic esters, trapping with alkenes, 679
Acyloins
see Ketols
Adamantanes
[4.4](1,3)-adamantanophane-*trans,trans*-diene, synth, conformation, 4829
adamantylation of *p*-H-calix[4]arene at the upper rim by reaction with functionally substituted 1-hydroxyadamantanes in trifluoroacetic acid, 543
adamantylideneadamantane, photooxidation of, trapping of the perepoxide intermediate by sulfenate and sulfinate esters, 2911
[3-^{13}C]-3,4-dimethyl-4-homoadamantyl *p*-nitrobenzoate, solvolysis of, comparison of the barriers to Wagner-Meerwein rearrangement of the secondary and tertiary 4-homoadamantyl cations, 1035
formylation of – by CO in presence of $CBr_4/AlBr_3$, 5775
hydroxylation by O_2/*N*-hydroxyphthalimide/$Co(acac)_2$ and other transition metal ions, 4993
linear bola-amphiphilic octaamine with *N*-adamantylmethyl groups, synth, 6465
2-oxaadamantane, synth from 2-methyl-2-hydroxyadamantane, 5673
plukenetione A, 2,4,9-trioxo– deriv from natural source, 8663
Addition reactions
1,4-addition of aldehydes to vinylketones, synth of 5-ketoaldehydes, 5139
addition of alkyl radicals to maleic anhydride and subsequent attack by nucleophilic aromatics, 7425
addition of Grignard reagents to ω-bromonitriles and γ,δ-unsaturated nitriles, synth of functionalised cyclic imines, 6227
1,4-addition of lithium dialkyl cuprates to half esters of 1,1'-binaphthalene-8,8'-diol followed by formal 1,2-addition, synth of optically active ketones, 7373
of allyltrimethylsilane to aldehydes catalysed by scandium trifluoromethanesulfonate, 3745
asymmetric addition of Grignard reagents to

chiral 1-acylpyridinium salts, chiral auxiliary study, 3807
asymmetric conjugate addition of lithium dimethylcuprate with chalcone using a chiral amidophosphine ligand, 7805
of carbon nucleophiles to chiral (E)-nitroalkenes bearing a γ-stereocenter, stereoselectivity, 3055
of chiral 6,7-dihydrooxepin-2(5*H*)-ones to enones, conformation and diastereofacial selectivity, 633
chiral auxiliary-promoted nucleophilic – to $Cr(CO)_3$ complexes, synth of functionalized cyclohexenones, 3087, 3089
chiral salen Schiff base for enantioselective addition of Et_2Zn to aldehydes, 4613
conjugate – of α-oxyalkylstannanes *via in situ* transmetalation using catalytic CuCN, 3811
conjugate – of C nucleophiles to chiral pyrrol-3-en-2-ones, 4573
conjugate – of *S* (–)-benzyl phenyl sulfoxide to but-2-en-4-olide, synth of (–)-podophyllotoxin, 4791
conjugate addition of diorganozinc to α,β-unsaturated ketones catalysed by a copper(I)-sulfonamide combined system, synth of zinc enolates, 5141
conjugate addition of diorganozincs to enones, αβ-unsaturated nitriles, nitroolefins, in *N*-methylpyrrolidone, 4495
copper(I)-mediated conjugate – of Grignard reagents to 2-silyloxycyclopentenecarboxylates, synth of 5-substituted-2-hydroxycyclopentanecarboxylates after desilylation, 6323
cyanide ion – to cationic (η^5-4-methoxycyclohexadienyl)$Fe(CO)_2L$ complexes, effect of ligand, 4515
and cyclopropanation reactions with nitroalkenes derived from (*R*)-2,3-isopropylidene glyceraldehyde, synth of *syn*-nitrocyclopropanes, 6307
cyclopropyl carbaldehydes, ketones, stereochemistry of nucleophilic –, 221
diastereoselective additions of alkenyl lithiums to aldehydes, synth of taxol A-ring components, 9139
diastereoselective additions to 2-acyl-*N,N*-dialkylnaphthamides, asymmetric induction using atropisomers, 5577
of diethylzinc to aromatic aldehydes promoted by 1,2,3,4-tetrahydro-β-carbolines, 5971
enantioselective – of organocerium reagents to aldehydes, effect of TADDOL ligand structure, 2675
enynyl sulfones, radical – of $TolSO_2SePh$, synth of 1,4-di(arenesulfonyl)-1,3-butadiene, 4161
π-facial selectivity in epoxidation and dihydroxylation of bicyclo[2.2.2]oct-2-enes with 5,6-*cis*-*exo*-substituted electron withdrawing groups, 1321
halogen transfer radical – of methyl 2-bromo-2-chlorocarboxylates to olefins, 2077
highly hindered β-arylisohexanoic acid derivs by asymmetric Michael –, 7817
homoallylic monoorganocopper reagent to 2-naphthyl-*exo*-bornylcrotonate, key step in synth of (*S*)-geranylcitronellol, a diterpene pheromone of *Bombus* and *Psithyrus* bees, 7127
hydride addition to endocyclic 1,2-anhydrosugars, synth of differentially protected anhydroalditols, 961
intermolecular radical additions of 2,3-*cis*-disubstituted 1,1-dibromo- and 1-bromocyclopropanes to electron-deficient olefins, 1837
intramolecular 1,6-conjugate addition for construction of the hydrindane framework from α, β, γ, δ-unsaturated esters, total synth of (±)-coronafacic acid, 6745
intramolecular – of trisilanes to carbon-carbon double bonds, synth of 3-(disilanylmethyl)-2-silatetrahydrofuran derivs which could be converted to polyols including a precursor to (–)-avenaciolide, 8887
intramolecular acetylide addition to aldehyde, construction of a highly strained nine-membered diyne system, 5135
lithium dibenzylamide promoted – of acetophenone to diethyl maleate, effect of TMSCl on reaction course, 4281
methoxy-selenenylation of allylic alcohols and derivs, stereochemistry, 1249
of methyl propynoate to cyclopentene and cyclohexene, examination of by high pressure kinetics, 1417
Michael – of thiols and amines to 3(2*H*)thiophenone 1,1-dioxide, synth of the corresponding vinyl sulfides and enamines, 119
Michael – of thiophenols to cycloalkenones catalysed by free bases of chiral *N*-substituted porphyrins, 2585
Michael – of various β-ketoesters to enones and α,β-unsaturated aldehydes catalysed by ytterbium triflate, synth of corresponding 1,4-adducts, 1879
of nitrile oxides to cobalt-coordinated 1,3-enynes, synth of 5-alkynyl-2-oxazoline derivs, 4341
nucleophilic – to 2-methylene-3,6-bicyclo[3.1.0]-

hexanes, synth of furans and dihydrofurans, 2781
nucleophilic addition of lithiated t-butylphenylphosphine oxide to carbonyl compds, synth of functionalised tertiary *P*-chiral phosphine oxides, 4729
of allyltrimethylsilane or 1,8-bis(trimethylsilyl)-2,6-octadiene and trifluoroacetic anhydride, synth of trifluoromethyldiallylcarbinol or (d,l)-1-trifluoromethyl-2,5-divinylcyclopentanol, 5107
of organocerium reagents to 4- and 5-oxazolidonecarbaldehydes, synth of *syn*- and *anti*-alcohols, 6677
of organocerium(III) reagents to carbonyl compds, synth of the organocerium reagents using anhydrous cerium(III) chloride, 6787
organocopper conjugate additions to 3-ketoacrylates, remote asymmetric induction in, 4293
of organolithiums to chiral hydrazones derived from (*S*)-indoline-2-carboxylic acid, synth of chiral hydrazines, 5543
organometallic addition to pyrilium salts followed by Wittig homologation and dehydrohalogenation, synth of conjugated dienynes, synth of the marine metabolite carduusyne A, 1913
oxidative addition of Rieke manganese to alkyl and thienyl bromides, synth of organomanganese bromides, 2197
palladium-catalysed addition of terminal alkynes to acceptor alkynes, synth of methyl 7,8,11,12-tetradehydroretinoate, 3971
radical additions to olefins in the presence of iodobenzenediacetate, synth of alkyl dithiocyanates, 1889
radical photo-addition of 1,3-dithian-2-yl phenylselenide to electron-deficient alkenes, 2743
regioselective Ni-catalysed hydride addition of allylic ethers, 3613
sequential additions of nucleophiles to tricarbonyl(η^4-cycloheptadienyl)iron tetrafluoroborate, synth of bridged bicyclo[4.2.1]nonane and tricyclo[5.2.1.$0^{4,8}$]decane skeletons, 7361
solvent promoted – of tetraallyltin to aldehydes, synth of the corresponding homoallyl alcohols, 1905
stereocontrolled enolate addition on thymidine C-5' aldehydes, synth of functionalised nucleosides, 4689
stereoselective radical additions to alkenes, the Curtin-Hammett principle, 351
stereospecific – of formaldehyde dialkylhydrazones to sugar aldehydes, synth of cyanohydrins and α-hydroxyaldehydes, 5787
tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions of olefinic esters, synth of 1-hydroxybicyclo[n.1.0]alkanes, 1849, corrig. 6959
thiophilic – of organolithiums to aliphatic α-methylthio-sulfines, formation of dithioacetal *S*-oxides, 4507
of trimethylsilyl cyanide to chiral hydrazones derived from (*S*)-1-amino-2-methoxymethylindoline, synth of chiral α-hydrazinonitriles, 7795
of 2-(trimethylstannyl)allylcopper(I)-dimethyl sulfide and lithium (3-trimethylgermylbut-3-en-1-yl)(cyano)cuprate to cyclopent-1-enecarbaldehyde, synth of fused bicyclo[3.3.0]octane and bicyclo[4.3.0]nonane, 5857

Aggregation
bis-isophthalic acid deriv forming H-bonded cavity network in crystal, 2327

Alcohols
syn-4-alkoxyalkan-1-ols, synth by reaction of allyl bromides with aldehydes mediated by chromium(II) chloride, 5487
2-(1-alkoxyalkyl) alk-2-enols, synth from Ti complexes of propargyl ethers, 7275
1-alkyn-5-ols, reaction with tetrahydrofurantungsten pentacarbonyl, cyclisation to the corresponding tungsten dihydropyranylidene carbenes, subsequent conversion into α-stannyl dihydropyrans, 4675
allylic –, reduction to transposed alkenes, diazene methodology, 4841
allylic –, solvent effects on stereoselectivity of ene reaction with singlet oxygen, 7159
allylic alcohols, epoxidation of – catalysed by WO_4^{2-}-exchanged LDH, 8557
allylic alcohols and homoallylic alcohols, coupling of functionalised aryl bromides with, formation of 5-membered rings and 6-membered rings respectively, 619
allylic alcohols, synth by rearrangement of 4-PhS-1,3-diols with TsCl in pyridine, scope and limitation of the [1,4] SPh shift, 1117
allylic, homoallylic, and propargylic alcohols, chiral Re(cpd)NO$(PPh_3)^+$ complexes, synth, reactions, 1225
aryl *cis* aminoalcohols, regio and stereocontrolled synth from *cis* glycols, 2529
trans,trans-4-aryl-2,3-oxetanedimethanols, analogues of the antiviral nucleoside oxetanocin A,

synth starting from *E*-2-bromo-1,3-pentadiene, 7667
β-aryl-β-aminoalcohols, synth from *N*-diphenylmethylene benzylamines, 945
benzocyclobutenols, electron-transfer induced electrocycloreversion of, generation of *o*-quinodimethane intermediates which tautomerise to benzophenones, 5547
benzylic and acetylenic alcohols, zeolite-catalysed oxidation of with t-butyl hydroperoxide, synth of the corresponding carbonyl compds, 7845
bishomoallylic alcohol derivs, dihydroxylation of using bis-cinchona alkaloid catalysts, 1735, 1739
(*R,S*)-1,1'-bi-5,6,7,8-tetrahydro-2-naphthol, *ipso*-fluorination of, synth of atropisomeric fluorocyclohexadienones, 7735
t-butyldimethylsilylation of − with *N,O*-bis(t-butyldimethylsilyl)acetamide, 605
3-(2-t-butylthiophenyl)-prop-2-en-1-ols, cyclisation of, synth of 2,3-disubstituted and 2,3,3-trisubstituted 2H-1-benzothiopyran derivs, 5077
by reduction of tertiary amides using lithium amidotrihydroborate, 3623
by regioselective reduction of carbonyl compds in aqueous media containing glycosidic surfactants or amphiphilic carbohydrates, 53
by selective cleavage of allyl ethers by use of $Ti(O\text{-}i\text{-}Pr)_4$ and a Grignard reagent, 3663
catalytic racemization of −, application to enzymatic kinetic resolution, 7623
chiral allylic alcohols by peroxidation of adducts from the addition of α,β-unsaturated dioxolanones to Grignard reagents, use in total synth of eicosanoids, 1421, 1425
chiral benzhydrols by enantioselective reduction of benzophenones using oxazaborolidine-catalyzed catecholborane, 5675
chiral homoallylic alcohols by chiral phosphoramide catalysed asymmetric allylation of aldehydes, 5149
chiral secondary − by chiral reduction of ketones using acetone powder of *Geotrichum candidum* and a 2-alkanol as reductant, 1629
chiral trifluoromethyl − by enantioselective reduction of trifluoromethyl ketones using alcohol dehydrogenase from *Geotrichum candidum*, 5727
(*Z*)-cinnamyl −, synth by Pd-catalyzed reaction of 4-oxa-3-stannacyclopent-1-enes ("stannoxanes") with aryl halides, 5287
conversion to corresponding formamides *via* Ritter reaction using trimethylsilyl cyanide, 8129
cyclic allylic alcohols, dihydroxylation of, 3407
cyclopropyl alcohols, cleavage of, synth of organomercurials and subsequent conversion to *cis*- and *trans*-fused lactones by carbonylation in the presence of *p*-benzoquinone, 1125
α,ω-diaminoitols, synth from unprotected pentitols and erythritol by successive treatment with thionyl chloride and sodium azide followed by catalytic hydrogen transfer, 3683
α-(dibromomethyl)benzenemethanols, synth by manganese(II) acetate catalysed reactions of αβ-unsaturated aromatic carboxylic acids with NBS, 2623
differentially protected anhydroalditols, synth by stereoselective hydride addition to endocyclic 1,2-anhydrosugars, 961
β,β-difluoro-homoallylic − from reactions of aldehydeswith2-(acetoxymethyl)-1,1-difluoro-3-(trimethylsilyl)prop-1-ene/TBAF, 5401
difluoroallylic alcohols, [2,3]-rearrangements of with C-P and C-S bond formation, formation of sulfoxides and phosphine oxides, 6403
1,7-dioxaspiro[5.5]undecane −, regio- and stereoselective reductive cleavage, 5649
disymmetric cyclohexylidene alcohols, aldehydes and ketones by asymmetric Horner-Emmons reaction of the phosphonate derived from a chiral benzopyrano-isoxazolidine, 1077
enantiopure aminoalcohols, synth from corresponding diols by activation of the diols as cyclic carbonates, azide opening of the carbonates and hydrogenation of the resulting azidoalcohols, 3219
enantioselective synth of secondary − by tris-TADDOL (1,3-dioxolan-derived auxiliary) organocerium addition to aldehydes, 5821
enzymatic resolution of − using 1-ethoxyvinyl acetate as a novel, highly reactive acyl donor, 7369
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
α-ferrocenyl alcohols, synth by oxazaborolidine catalysed reduction of ferrocenyl ketones, subsequent use in synth of 1- and 1,1'-ferrocenepropanoic acids, 7861
glycopeptides containing *O*-α-fucosyl-(1*R*,2*R*)-2-aminocyclohexanol, design and synth as sialyl Lewis X mimetics, 5427
highly substituted cyclohexanol, loss of stereochemical integrity at a neighbouring quaternary carbon during oxidation of, 1721

homoallyl alcohols, enzymatic resolution of leading to synth of fluoxetine and related compds, 9253
anti-homoallyl alcohols from reaction between *cis*-2-alkenyltins and aldehydes when the substituent at the 2-position of the alkenyltin reagent was bulky, 3701
homoallyl alcohols, synth by solvent promoted addition of tetraallyltin to aldehydes, 1905
homoallylic – by Si to OH conversion, synth of (±)-lavandulol, 6929
1-hydroxybicyclo[n.1.0]alkanes (n = 3 and 4), synth from olefinic esters *via* tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions, 1849, corrig. 6959
2-hydroxymethyl-4-methylenecyclohexanol by treatment of olefinic epoxy alcohol with diethylaluminium fluoride, new synth of dideoxycarbocyclic sugars, 3
3-hydroxymethyltetrahydrofurans, synth by 5-*exo*-cyclization of iodo-alkenes with oxygenation, 3117
inversion of configuration of secondary – using chloromethanesulfonyl chloride and CsOAc, 6145
iodination of methoxybenzenes with *N*-iodosuccinimide in acetonitrile, 4081
ketone alcohols or diols from tandem radical cyclisation of acylsilanes with alkene or alkyne functionalities attached to silicon followed by hydrolysis, 7767
medium-ring lactones, reaction with unstabilized phosphonium ylids, formation of olefinic –, 3853
methoxy-selenenylation of allylic – and derivs, stereochemistry, 1249
5(*N*-methylbenzoylamino)-2,2,6,6-tetramethylheptan-3-ol as a new class of recoverable chiral auxiliary, 1863
methylene silacyclohexanols by type II intramolecular carbonyl ene reactions of vinyl silanes, 3411
optically active alcohols by reductive desulfurisation of thioethers bearing an optically active alcohol with Raney nickel-sodium hypophosphite-acetate buffer system, 2271
optically active, axially chiral binaphthol-based oligomers, synth *via* Hay's coupling from the corresponding monomer, 2979
primary and secondary alcohols, conversion to the corresponding bis-(pentafluorophenyl)phosphate triesters which are converted to serine-threonine protein phosphatase substrates, 8227
primary and secondary alcohols, Misunobu reaction of using DBAD or DEAD, synth of protected hydrazines, 4327
primary and secondary alcohols, oxidation with acyl nitrates supported on montmorillonite or chrysotile, synth of aldehydes and ketones, 5029
protected allylic –, diastereoselective Rh-catalyzed hydroformylation, 6877
protected and free homoallylic alcohols, synth by allylation of aldehydes with allyltributyltin using dibutyltin dichloride as catalyst, 3955
racemic secondary alcohols, nonenzymatic enantioselective acylation of catalysed by a SnX_2-chiral diamine complex, 8543
reaction with magnesium in the presence of iodine, prep of magnesium alkoxides which could be treated with benzyl chloride or allyl bromide to produce benzyl alkyl ethers or allyl alkyl ethers, 5159
reactions with thianthrene cation radical, isolation and chemistry of 5-cyclohexyloxythianthreniumyl perchlorate, 1749
$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
sec-alcohols, kinetic resolution of using axially chiral twisted amides, 4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, 6777
secondary and tertiary – as nucleophiles in stereospecific synth of substituted tetrahydrofurans by cyclisation of 1,3-diols with phenylsulfanyl migration, 4077
sterically hindered – and phenols, formation of trifluoromethanesulfinates with Tf_2O/Et_3N, mechanism, 8359
substituted methylenecyclohexenols and methylenecycloheptenediols from cleavage reactions of 2-methylene-7-oxabicyclo[2.2.1]heptane and 6-methylene-8-oxabicyclo[3.2.1]octanes, 1727
1-substituted *syn*-2-methyl-3-buten-1-ols by γ-*syn*-selective carbonyl allylation by 1-bromo-2-butene with tin(II) iodide and tetrabutylammonium bromide, 7103
(*Z*)-1-substituted-5-silyl-4-penten-1-ols, *p*-toluenesulfonic acid catalysed cyclisation of, synth of 2,5-disubstituted tetrahydrofurans, 487
syn- and *anti*-alcohols, synth by addition of 4- and 5-oxazolidonecarbaldehydes to organocerium reagents, 6677
tetrahydropyranylation and deprotection of –

catalysed by heteropoly acids, 8597
tetrasubstituted triethylene glycols or disubstituted triethylene glycols, synth by alkylation of stannylene acetals by 1,2-dibromoethane or by 2-chloroethanol, 433
treatment with Ph_3P/DEAD or Bu_3P/ADDP, synth of products resulting from intramolecular cyclisation followed by Stevens rearrangement, 8133
trifluoroethanol, transformation into functionally diverse monofluorinated vinylic compds *via* Wittig rearrangements, 5183
α-trifluoromethylated alcohols, functional group transformation of, 8187
trifluoromethyldiallylcarbinol or (d,l)-1-trifluoromethyl-2,5-divinylcyclopentanol, synth by addition of allyltrimethylsilane or 1,8-bis(trimethylsilyl)-2,6-octadiene and trifluoroacetic anhydride, 5107
triisopropylsilanol, new type of phase transfer catalyst for dehydrohalogenation, 2561
3- and 2-(trimethylsilyl)allyl alcohols, cathodic coupling of ketones with, synth of trimethylsilyl substituted 1,3-diols and homoallylic alcohols respectively, 6737
unsymmetrically substituted 2,4-diyne alcohols, synth by Cadiot-Chodkiewicz coupling, NMR, polymerization, 5023

Aldehydes
acetalization and thioacetalization using kaolinitic clay as catalyst, 4605
addition to allyltrimethylsilane catalysed by scandium trifluoromethanesulfonate, 3745
1,4-addition to vinylketones, synth of 5-ketoaldehydes, 5139
aliphatic –, reaction with phenyl salicylates, synth of the corresponding acetals, 3755
aliphatic and arylic aldehydes, reaction with lithium salt of diethyl difluoromethylphosphonate as a difluoromethyl carrier, synth of difluoromethyl ketones, 4707, 4711
allylation of – with allyltributyltin using dibutyltin dichloride as catalyst, synth of protected and free homoallylic alcohols, 3955
allylation of using the allylic tin(IV)-tin(II) chloride-acetonitrile system, 5951
aromatic –, coupling to d,l-hydrobenzoins on treatment with anhydrous titanium trichloride in dichloromethane, 3035
aromatic aldehydes by reaction of pyridine *N*-oxide with benzylic bromides under microwave irradiation, 7725
asymmetric allylation of – with BINOL-Ti(IV) complex accelerated by *i*-PrSSiMe$_3$, 7095
asymmetric allylation of – catalysed by substoichiometric amounts of chiral phosphoramides, synth of chiral homoallylic alcohols, 5149
asymmetrised bis(hydroxymethyl)acetaldehyde, stereoselective two-direction elongation of, synth of intermediate to thienamycin and imipenem carbapenems, 521
benzaldehydes, starting materials for synth of photolabile alkoxy benzoin protecting groups by Corey-Seebach dithiane addition, 307
bis-glycolaldehyde phosphate ester, intramolecular aldol reactions, tetrose cyclic phosphate synth, 5779
role of bis(thiazolin-2-ylidene)s as catalytic species in benzoin condensation, 5019
o-bromobenzaldehyde and allyl amine, aryl radical cyclisation in the presence of tributyltin hydride, synth of fused tricyclic β-lactams, 1363
chiral borane-mediated aldol reaction with chiral aldehydes, formation of both enantiomers, 2597
1,6-cycloheptatrienedicarboxaldehyde, condensation with a tripyrrane dicarboxylic acid followed by neutralisation and oxidation, synth of a cycloheptatrienyl porphyrin analogue, 8825
cyclopropyl carbaldehydes, ketones, stereochemistry of nucleophilic addition, 221
dialdehyde carrying a t-butylphenyl group, intramolecular aldol condensation of catalysed by the imidazole groups of a cyclodextrin-bis-imidazole enzyme mimic, 2541
diastereoselective addition of alkenyl lithiums to aldehydes, synth of taxol A-ring components, 9139
diastereoselective Rh-catalyzed hydroformylation of protected allylic alcohols, synth of 2-hydroxycyclohexaneacetaldehydes, 6877
N,N-dibenzyl α-amino aldehydes, condensations with nitroalkanes mediated by tetrabutylammonium fluoride, synth of acyclic 1,3-diamino-2-alcohols, 987
disymmetric cyclohexylidene alcohols, aldehydes and ketones by asymmetric Horner-Emmons reaction of the phosphonate derived from a chiral benzopyrano-isoxazolidine, 1077
enantioselective addition of organocerium reagents to –, effect of TADDOL ligand structure, 2675
α,β-epoxy aldehydes by deblocking of oxazolinyl oxiranes derived from treatment of 4,4-dimethyloxazolinylchloromethyllithium with aldehydes, 4777, 4781
formaldehyde diethyl acetal for condensation of

2-propylresorcinol with formaldehyde diethyl acetal, formation and isomerisation of calix[4]-resorcinarene, calix[5]resorcinarene and calix-[6]resorcinarene, 7383
formation of thioacetals using anhydrous $ZrCl_4$ on silica gel as catalyst, 4621
free energies of hemiacetal formation in aqueous solution between alcohols and acetaldehyde, chloral, and fluoral, effect of $n \rightarrow \sigma^*$ interactions, 9279
from deblocking of dithioacetals and oxathio-acetals using periodic acid, 4331
halitunal, diterpene aldehyde with antiviral activity against mourn coronavirus strain A59, synth from (+)-genipin, 2253
β-hydroxy aldehyde libraries, synth by $Sc(OTf)_3$-catalysed aldol reactions of polymer-supported silyl enol ethers, 5569
β-hydroxy aldehydes and ketones, allylboration of with allylboronic acid, synth of *anti*-1,3-diols, 2181
α-hydroxy–, formation from α-hydroxy-dichloro-methyl sugar derivs with retention and inversion of configuration, 2799
6β-hydroxy-gibberellin-7α-carboxaldehyde, rearrangement results in ring-expansion of the B-ring to afford functionalised 20-norkaurenoids, 8937
4-hydroxy-*meta*-phthalaldehyde, synth by formylation of salicylaldehyde or *p*-hydroxybenzaldehyde, conversion into 2-aroyl-5-benzofuran-5-carbaldehydes, 9267
intramolecular reaction with oxo-substituted allenyl- and propargylstannane, synth of cyclic ethers, 3059
ketones and aldehydes by oxidation of primary and secondary alcohols with acyl nitrates supported on montmorillonite or chrysotile, 5029
– and ketones, synth using *N*-methoxy-amides on solid support, 1161
Lewis acidity of TMS-Cl and TMS-CN toward an α,β-unsaturated aldehyde: importance in organocuprate 1,4-additions to enones: *ab initio* study, 8471
3-methylene-2,3-dihydrofuran, ene reactions with – promoted by Lewis acids, 7893
2-methylpropanal and dioxygen for the oxidation of sulfides to sulfones, 3367
p-nitroarylaldehydes, synth by reaction of nitroarenes with tris(benzotriazol-1-yl)methyl anion and subsequent treatment with zinc bromide and hydrochloric acid, 347
4- and 5-oxazolidonecarbaldehydes, addition of organocerium reagents to, synth of *syn*- and *anti*-alcohols, 6677
phenylglycal, reaction with L-ephedrine to yield 2-benzoyl-3,4-dimethyl-5-phenyl-1,3-oxazolidines which rearrange to 4,5-dimethyl-3,6-diphenylmorpholin-2-one, 8223
o-phthalaldehyde, Lewis acid promoted reaction with trialkyl phosphites, synth of 1-dialkyloxyphosphorylisobenzofuran, 5963
O-protected 2-hydroxy aldehydes by DIBA-H reduction of *O*-TBDMS derivs of cyanohydrins followed by hydrolysis, 5893
protected α-hydroxy aldehydes, ozonolysis of adducts from the addition of α,β-unsaturated dioxolanones to Grignard reagents, use in total synth of eicosanoids, 1421, 1425
reaction with allyl bromides mediated by chromium(II) chloride, synth of *syn*-4-alkoxyalkan-1-ols, 5487
reaction with C_{60} in the presence of aqueous ammonia, synth of 2,5-dialkyl-substituted pyrrolidine derivs or $C_{60}(H)(CH_2Ph)$, 4031
reaction with *cis*-2-alkenyltins, synth of *anti*-homoallyl alcohols when the substituent at the 2-position of the alkenyltin reagent was bulky, 3701
SmI_2 reduction of dialdehyde in synth of D-*myo*-inositol derivative, 885
silica gel catalyzed Wittig reactions of – with methoxycarbonylmethylene phosphoranes, 1281
solvent promoted addition of tetraallyltin to –, synth of the corresponding homoallyl alcohols, 1905
stereospecific addition of formaldehyde dialkylhydrazones to sugar aldehydes, synth of cyanohydrins and α-hydroxyaldehydes, 5787
steric effects in reactions with enol diisopinocampheylborinates of methyl ketones, 4911
C_2-symmetric substituted benzaldehydes, condensation with achiral aryldipyrromethanes, synth of D_2-symmetric 5,10,15,20-tetraarylporphyrins, 6291
γ-*syn*-selective allylation of by 1-bromo-2-butene with tin(II) iodide and tetrabutylammonium bromide, synth of 1-substituted *syn*-2-methyl-3-buten-1-ols, 7103
tandem [2+2] cycloaddition-cycloreversion reaction with acyl chlorides, synth of substituted alkenes, 7143
three-component reactions with amines and silylated nucleophiles, synth of β-amino ketones,

β-amino esters and α-amino nitriles, 9221
thymidine C-5' aldehydes, stereocontrolled enolate addition on –, synth of functionalised nucleosides, 4689
o-tributylstannylmethyl benzaldehyde, reaction with zinc in the presence of TMSCl and 2,6-lutidine, synth of α-trimethylsiloxy-*o*-quinodimethanes, 8891
trimethylsilylcyanation of catalysed by diorganotin dichlorides, 2525
tris-TADDOL (1,3-dioxolan-derived auxiliary) organocerium, enantioselective addition to –, 5821
see also Enals

Aldol reactions
aldol-type reactions of aldimines forming αβ-unsaturated imines catalyzed by Sm compounds, 7291
aldolisation of 2,6,7-trideoxy-2,6-imino-D-glycero-L-mannose and a 7-oxanorbornanone, synth of β-D-(1→3)-C-linked 1,5,6-trideoxy-1,5-iminogalactoside of D-altrose derivs, 483
γ-alkylation at C-9 in the abietane framework and subsequent aldol reaction, synth of the scopadulcic acid skeleton; ring-D formation by intramolecular aldol and alkylation reactions, 8459, 8463
anti-aldol recations of α-alkoxymethyl ketones, key step in synth of (+)-restricticin antifungal agent, 8243
application of metallated α-alkoxypropargyl and γ-alkoxyallenyl derivs in aldol reactions towards synth of erigerol, 5519, 5523
asymmetric aldol-like reactions of cinnamaldehyde and the C7-C12 and C15-C24 fragments of macrolactin A with acetylthiazolidinethione-derived enolates , boron enolates and silyl enolates, comparison, 8949
asymmetric aldol/oxy-Cope strategy for synth of γ,δ-dichiral α,β-unsaturated acid derivs, 8895, 8899
asymmetric Henry (nitroaldol) reactions of α,α-difluoroaldehydes catalyzed by lanthanide lithium BINOL complexes, 9081
γ-benzyloxybutanal – with glycine catalyzed by L-threonine aldolase, synth of mycestericin D, 2791
boron aldol reaction of α-halosubstituted thioacetates with silyl imines, enantio- and diastereoselective synth of aziridines, 3747
boron-mediated aldol reactions of β-oxygenated methyl ketones with achiral aldehydes: reductions of the resulting aldol products provides 1,3-polyols, 8585
camphor-derived imidazolidinone auxiliaries for asymmetric –, opposite diastereoselectivity using Ti and Li enolates, 6931
chiral borane-mediated aldol reaction with chiral aldehydes, formation of both enantiomers, 2597
chiral silyl dienol aldol adducts on an oxazolidinone template, silyloxy-Cope rearrangements, 4471
diastereoselective –, use of 2,3-dihydro-4*H*-1,3-benzoxazin-4-one chiral deriv from *l*-menthone, 3129
double stereodifferentiating – of (*E*) and (*Z*) lithium enolates, models for polypropionate assembly, 1957
enol borinate aldol strategy for chiral synth of tetrahydropyran-containing C18-C30 core of phorboxazoles, 6449
enol diisopinocampheylborinates of methyl ketones, steric effects in reactions with aldehydes, 4911
intramolecular aldol condensation of a dialdehyde carrying a t-butylphenyl group catalysed by the imidazole groups of a cyclodextrin-bis-imidazole enzyme mimic, 2541
iterative asymmetric aldol reactions on solid support, 6851
retro-aldol reaction of R106-1 (LY295337) promoted by trimethylamine *N*-oxide, generation of R106-sarcosine, 4301
$Sc(OTf)_3$-catalysed – of polymer-supported silyl enol ethers with aldehydes, prep of 1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, 5569
transition metal-catalysed diastereoselective – of prochiral ketones with methyl isocyanoacetate, synth of methyl (4*R*,5*R*)-4,5-dihydro-5,5-(disubstituted)-4-oxazolecarboxylates, 7845
trialkylchlorosilanes with $B(OTf)_3$ form "supersilylating agents", potent reagents for allylsilane/aldehyde additions and Mukaiyama aldol reactions, 9401
7-*O*-trimethylsilyl-13-oxobaccatin III, NaH/MeI rearrangement to ten-membered A-*seco* and (6,6)-AB-*abeo* structures by retro-aldol and aldol recyclization processes, 9365

Alkaloids
abrine, Pictet-Spengler reaction of methyl ester of abrine with aldehydes, synth of N_b-methyl-1,2,3,4-tetrahydro-β-carbolines as promoters in addition of diethylzinc toward aromatic aldehydes, 5971

aceropterine, marine alkaloid from gorgonian *Pseudopterogorgia acerosa* 2687

agrocybenine, fungal pyrrolo[3,2-*b*]pyridinone – from *Agrocybe cylindracea*, 4549

anabasine, synth of 3-(3-pyridyl)-2-azabicyclo-[2.2.2]octane, semi-rigid analogue of anabasine from 3-pyridine bismethylcarbamate, 8841

(–)-anhydromacrosalhine-methinemacroline/sarpagine related indole alkaloid, synth by Pictet-Spengler reaction, subsequent coupling with (+)-pleiocarpamine yields the (–)-macrocarpamine alkaloid, 5033, 5037

aporphine –, approach by tandem acylation-cycloalkylation of 3,4-dimethoxyphenylethylamine by cyclohexene-1-acetic acid, synth of *N*-nornuciferine, 1671

arcyroxocin A, slime mould indole –, synth, 4483

Aspidosperma alkaloids, synth of precursors to from spiroindoline imides, 37

batzelladines A-D, guanidine alkaloids from Caribbean sponge *Batzella* sp., synth of tricyclic portions of from a ptilomycalin A deriv, 6977

batzelladines, marine – with 5,6,8b-triazaacenaphthene (guanidine) core, condensation of guanidine with octadeca-3,7-diene-2,9-dione, 6943

batzelline C, isobatzelline C, discorhabdin C and makaluvamine D, cytotoxic marine alkaloids and inhibitors of topoisomerase, synth from 6,7-dimethoxy-4-methyl-5-nitroquinoline, 1509

benzo[*c*]phenanthridine – pseudobase dimers, structures using pulsed-field-gradient HMBC, 1655

bis-cinchona alkaloid catalyst for enantioselective dihydroxylation of bishomoallylic alcohol derivs, 1735, 1739

1,6-*O,O*-bis-t-butyldimethylsilylcastanospermine, conversion into (1'*S*,2*R*,3*R*,4*R*,5*S*)-2-(1'-hydroxy-2'-propenyl)piperidine-3,4,5-triol (deoxynojirimycin analogue), 8573

calystegine B_1 (tetrahydroxynortropane) glucoside, isol from *Nicandra physalodes*, structure, 3207

camptothecin and analogues, synth of indolizino-[1,2-*b*]quinolin-4-ones by intramolecular cycloadditions of *N*-arylimidates and 4*H*-3,1-benzoxazin-4-ones, 5679, 5683

carazostatin and hyellazole, poly-substituted carbazole alkaloids from fungi and marine algae respectively, synth by allene-mediated electrocyclic reaction involving the indole 2,3-bond as key step, 2593

castanospermine and australine analogues by reaction of cysteamine with D-ribofuranose and subsequent cyclisation, 49

(+)-castanospermine, polyhydroxylated alkaloid from *Castanospermum australe* and *Alexa leiopetala*, formal synth from tetrabenzylgluconolactam, 547

cephalotaxane, approach to synth, 5701, corrig. 8063

cephalotaxidene, dimeric alkaloid from *Cephalotaxus harringtonia* var. *drupacea*, structure, 7053

cepharadione B and aristocularine, 4,5-dioxoaporphineand[1]benzoxepino[2,3,4-*hi*]isoindole –, synth from substituted biphenyl and biphenyl ether precursors, 9357

cerpegin, 2-pyridone lactone from *Ceropegia juncea*, short synth, 8733

chanoclavine-I, ergot –, synth from tryptophan utilizing intramolecular Heck reaction, 9309

(±)-cherylline and (±)-cherylline dimethylether, *Amaryllidaceae* alkaloids with biological activity, synth by cyclisation of trimethoxy-*o*-aroyldiphenylphosphoryl methylbenzamide, 3697

clathryimine, 3-phenyl-6,7,8,9-tetrahydroquinolizinium-4-carboxylate, – from sponge *Clathria basilana*, 2389

clausenamine-A, binary carbazole alkaloid and carbazomarin-A, a carbazole-pyranocoumarin dimer, isolation from stem and root bark of *Clausena excavata*, structures, 7819

cocaine, modification of Willstätter synth to prepare 6/7-oxy-substituted analogues, 5333

(–)-codonopsine, antibiotic alkaloid isolated from *Codonopsis clematidea*, synth employing reduction of α-hydroxypyrrolidine, 5531

(*R*)-coniine, hemlock alkaloid, synth by reaction of organolithiums with chiral hydrazones derived from (*S*)-indoline-2-carboxylic acid, 5543

coniine, synth by asymmetric conjugate allylation of *N*-(8-arylmenthyloxycarbonyl) 2,3-dihydro-4-pyridones catalyzed by $TiCl_4$, 9063

cryptolepine, hydroxycryptolepine, quindoline, synth by intramolecular nucleophilic β-substitution of 1-phenylsulfonyl-2-acylindoles, 4283

cynometrine, γ-lactam imidazole – from *Cynometra hankei*, synth, 3915

cytochrome P-450-dependent formation of isoandrocymbine from autumnaline in colchicine biosynth, 8161

deoxymannojirimycin, polyhydroxylated piperidine alkaloid, asymmetric synth by kinetic resolution of an α-furfurylamine deriv, 1461

(±)-dienomycin C and (±)-4-*epi*-dienomycin C, alkaloids from *Streptomyces* with antibiotic activity, synth by elaboration of 2,3,4-substituted piperidines using diene iron tricarbonyl complexes, 3991

epi-16,17-dihydroeburnamenine, synth of pentacyclic skeleton by intramolecular 1,4-dipolar cycloaddition of an anhydro-4-hydroxy-2-oxo-1,3-thiazium hydroxide across a tethered indole π-bond, 335

dispacamides, sponge − with antihistamine activity, 3587

epibatidine, an antinociceptive alkaloid originally isolated from *Epipedobates tricolor* poison frog, synth from a tropinone, 1463

(-)-epibatidine, frog −, chiral synth, 7485

(±)-epidihydropinidine, synth from pyridine by reductive alkylation using Me-Li and triallyl borane, 1317

epilachnene, norepilachnene, homoepilachnene, 9-propyl-10-aza-cyclododecan-12-olide and epilachnadiene, azamacrolides from Mexican bean beetle, synth from epoxychlorides, 8613

eudistomin and eudistomidin alkaloids with an oxathiazepine ring system, approach to by nucleophilic addition of chiral enolates with chiral iminium ion, 575

eudistomins T and S, xestomanzamine A, marine 1-acyl-β-carboline −, synth using iminophosphoranes, 9353

febrifugine, *hydrangea* alkaloid with antimalarial and anticoccidial properties, synth by coupling of epoxides generated from cyclic ene carbamates with silyl enol ether, 3255

(+)-ferruginine, tropane alkaloid, radical rearrangement of, route to functionalised 6-azabicyclo[3.2.1]octane system, 2201

flustramine C, marine pyrrolo[2,3-*a*]indole − with reversed prenyl at C-3a, synth, 7525

functionalised pyrrolo[2,1-*a*]isoquinolones, intermediates to *Erythrina* alkaloids, synth by sequential addition of organolithium reagents and *N*-acyliminium ion cyclisation of *N*-phenethylsuccinimide, 7841

furostifoline, furo[3,2-*a*]carbazole alkaloid, total synth from 4-aminobenzofuran using a convergent iron-mediated construction of the carbazole nucleus, 9183

(±)-geissoschizine, synth of des-hydroxymethylene precursor, 9105

girinimbine, murrayacine, dihydroxygirinimbine, carbazole −, synth using Mo π-complexes, 7947

(−)-halicyclamine B, tetracyclic diamine from the sponge *Xestospongia* sp., structure and biogenetic origin, 9151

(±)-heliotridane and (6*S*,7*S*)-dihydroxyheliotridane, synth by sequential H atom abstraction and cyclization, 5825

homopumiliotoxin alkaloids, quinolizidine based diene alkaloids, synth of the core unit by reductive cyclisation of a 1,1-dibromoalkene to an acetylene, 7151

hyrtiomanzamine, β-carboline − from Red Sea specimens of sponge *Hyrtios erecta*, 3457

(±)-ibogamine and (±)-*epi*-ibogamine, synth, 8289

(+)-indolizidine 195 B and (+)-monomorine, indolizidine alkaloids, total synth involving formation of a 2,6-disubstituted piperidine intermediate, 111

indolizidine alkaloids 167B and 209D, synth by radical cyclisation of β-aminoacrylates, 1445

indolo[2,3-*a*]quinolizine system present in alkaloids, route to involving cross-coupling of a 2-indolylzinc deriv with 2-halopyridine, hydrogenation of the pyridine ring and cyclisation on indole 3-position, 3071

(+)-isonitramine, spirocyclic alkaloid from plants of *Nitraria* genus, asymmetric synth by "triple allylic strain-controlled" intramolecular lactam enolate S_N2' alkylation, 1433

keramaphidin B, manzamine-related alkaloid from sponge *Amphimedon* sp., absolute stereochemistry of on the basis of ^{1}H NMR of the MTPA esters, 8203

korupensamine C, ancistrobrevine B, and *ent*-korupensamine D, 5-(1-naphthyl)-1,2,3,4-tetrahydroisoquinoline − from liana *Ancistrocladus korupensis*, synth, 3097, 3099

lycoramine, *Amaryllidaceae* alkaloid, switching regiocontrol in 1-aryl-substituted cyclohexadienyliron complexes in a synth of lycoramine, 6283

lycorines, alkaloids isolated from *Amaryllidaceae* sp., synth based on intramolecular cycloaddition of an azadiene and an aryne, 405

Manzamine A, cytotoxic alkaloid, synth *via* isoquinoline derivs derived from (*Z*)-enol ethers, 7019

manzamine A, polycyclic alkaloid with cytotoxic, antileukemic and antibacterial activities, construction of the tricyclic ABC ring subunit, 7365

manzamine, marine −, synth of macrocyclic bis-tetrahydropyridine in biomimetic approach to

manzamines and keramaphidin B, 6919
(+)-*O*-methylarmepavine, benzyltetrahydroisoquinoline –, synth by prolinol-directed nucleophilic benzylation, 6161
morphine, chemoenzymatic synth of the morphine skeleton by dihydroxylation of β-bromoethyl benzene, vinyl and aryl radical cyclisations and Friedel-Crafts C_{10}-C_{11} closure, 8155
neocryptolepine and biscryptolepine, indolo[3,2-*b*]quinoline alkaloids, isolation and structure, 1703, corrig. 3217
(±)-oxerine, formal synth by radical cyclization route, 8049
pancratistatin, *Amaryllidaceae* alkaloid exhibiting antitumour activity, synth of aminocyclitol fragment of from 7-oxanorbornenic disulfone, 105
paucidactine A and B, heptacyclic indole – from *Kopsia pauciflora*, structures, 3603
pauciflorines A and B, pentacyclic indole – from *Kopsia pauciflora*, melanin biosynthesis inhibitors, 5765
penaresidins A and B, sphingosine-derived alkaloids with actomysin ATPase-activating activity, isolation from Okinawan sponge *Penares* sp., absolute stereochemistry of, 6775
physoperuvine tropane alkaloid, synth of 3-hydroxy analogue of by Meisenheimer rearrangement of 3-t-butyldimethylsiloxy-8-methyl-8-azabicyclo[3.2.1]oct-6-ene *N*-oxide, 97
pinidine and *ent*-pinidine, synth *via* cyclopropanation of chiral *N*-tosylnorgranatanone silyl enol ether, 4987
polycarpine, dimeric imidazole disulfide marine – from ascidian, 2369
protoberberine –, photochemical hydroxymethylation, synth of (±)-solidaline from palmatine chloride, 3575
(+)-pumiliotoxin C, *cis*-decahydroquinoline alkaloid, synth involving palladium-catalysed reductive cyclisation of cyclohexenol, 4401
(–)-retronecanol, synth to demonstrate PET cyclisation of α-trimethylsilylmethyl amines with tethered non-activated olefins, 2285
ruspolinone, pyrrolidine alkaloid from *Ruspollia hypercrateriformis*, synth by reduction of the C=C unit of enaminoketone, 7749
sagitol, a pyridoacridine alkaloid from the deep water sponge *Oceanapia sagittaria*, structure, 9147
3,4-secoakuammilan derivs, construction of quaternary C-7 centre of akuammilines, 6611
silicine-methuenine –, synth of the tetracyclic ring system, 3541
(+)-α-skytanthine, monoterpene –, synth by Mitsunobu cyclization, 2463
sparteine, approach to chiral synth by intramolecular Schmidt reactions, 1531
stellettadine A, acylated bisguanidinium alkaloid which induces larval metamorphosis in ascidians, isolation from *Stelletta* sp., structure, 5555
stevensine, $C_{11}N_5$ marine sponge alkaloid, synth from the related alkaloid hymenin involving a protobromination/transbromination of 4'-bromohymenin, 8121
4-substituted-1,2,3,4-tetrahydro-β-carbolines, synth *via* intramolecular radical cyclisation and Heck reaction of the corresponding *N*-allylisogramine deriv, 2659
L-(+)-swainsonine and dihydroxy-L-swainsonines, synth as inhibitors of naringinase (L-rhamnosidase), 8561, 8565, 8569
tacamine-type indole alkaloids, synth of methyl 3α-ethyl-1,2,3,4,6,7,12bβ-octahydroindolo[2,3-*a*]quinolizine-1α-carboxylate from methyl 5-(1'-hydroxyethyl)nicotinate as intermediate to, 1513
tenuisines A-C, bisindoles with C_2 symmetry from *Kopsia tenuis*, 8811
tobacco –, synth of minor members from (3-pyridylmethyl)amine *via* lithiation of its benzophenone imine derivative, 1137
topsentin, deoxytopsentin and bromotopsentin, marine bis-indole alkaloids, synth involving 1,2-addition/oxidation to construct the bis-heteroarylketones and heteroarylation involving 3-stannylindoles, 5503
tropane alkaloid skeleton, synth by BF_3-induced rearrangement of aziridinocyclopropanes derived from 2-phenylsulfonyl-1,3-dienes, 3371
tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), isolation from *Latrunculia* South African sponge, 7135
tuberostemonines, synth of pyrrolo[3,2,1-*jk*][1]-benzazepine core, 739
(±)-tubifolidine, (±)-dihydroakuammicine and (±)-akuammicine, *Strychnos* alkaloids, construction of the piperidine ring from 3a-(*o*-nitrophenyl)hexahydroindol-4-ones, 5213
untenines A-C, nitroalkyl pyridine alkaloids with anti-microfouling activity from the Okinawan sponge *Callyspongia* sp., structures and synth of untenine A, 1813
vindoline, aspidosperma alkaloid, anodic oxida-

tion of – followed by reduction of the formed intermediate, synth of 10,10'-bisvindoline, 3659
withasomnine, pyrazole alkaloid from *Withania somnifera* Dun, synth by rearrangement of 1-(3-chloropropyl)-cyclopropanol into 5,6-dihydro-4*H*-pyrrolo[1,2-*b*]pyrazole followed by bromination and phenylation, 1095

Alkanes

alkane- and arylalkanenitrolic acid esters, reaction with Bu_3SnH in the presence of AIBN, synth of nitriles, 7791
nitroalkanes, treatment with a base and subsequent reaction with $TiCl_4$, synth of hydroximoyl chlorides, 6407
substituted 1,4-dihalobutanes, reductive cyclisation of, synth of cyclobutyl ketones, 443

Alkenes

3-*O*-acetylated sugar 1-nitro-1-alkenes, reduction with zinc and acetic acid, route to 2,3-unsaturated sugar derivs, 415
alkenyl anions, reactions with squarate esters, the responsibility of helical equilibration within the advanced octatetraene intermediate for stereochemical control, 3299
alkenyl halides by reaction of alkenyl boronic acids with halosuccinimides, 567
α-alkenylation of enones involving Pd-catalysed coupling of alkenylzincs with alkenyl iodides, prep of nakienone B, a marine natural product, 4679
2-alkenylcarbapenems, synth *via* the Heck reaction of carbapenem-2-yl triflate with mono-substituted alkenes, 2987
2-aryl-1-nitro-1-alkenes, unexpected reaction with trialkylgallium compds *via* NO_2/alkyl substitution, 3347
aryl-alkenes by a combined Shapiro-Suzuki reaction in one-pot without isolation of the boron containing intermediates, 429
asymmetric hydroboration using isopinocampheyl bromoborane, 9021
1,2-azidohydroperoxides by photooxygenation of – in presence of azide ions, photoinduced electron transfer mechanism, 8367
aziridination of – by chiral 3-acetoxyamino-3,4-dihydroquinazolin-4-ones, reagent-controlled diastereoselectivity in, 5179
BocNH-CH(CH_2Ph)CH=CHCH_2CO_2H, synth of Phe-Gly (*E*)-alkene isostere by β-elimination, 5359
(*Z*)-1-bromo-1-alkenes, synth by palladium catalysed hydrogenolysis of 1,1-dibromo-1-alkenes by tributyltin hydride, 6759
trans-2-butene, ozonation in gas phase, observation of secondary 2-butene ozonide in, 3391
by tandem [2+2] cycloaddition-cycloreversion reaction between acyl chlorides and α,β-unsaturated aldehydes, 7143
chiral (E)-nitroalkenes bearing a γ-stereocenter, addition reaction with carbon nucleophiles, stereoselectivity, 3055
conversion into oxazolidine-2-thiones by Co(II)-catalyzed oxidation and trimethylsilyl isothiocyanate reaction, 7315
1,3-dibromopropene, reaction with carbonyl compds mediated by indium in water, synth of bis-allylation products, 295
dimethyl dioxirane epoxidation of –, non polar concerted mechanism, 5991
α,α'-dimethylstilbenes, photooxygenation of sensitised by photochromic compds, 5127
3,7-dimethyltricyclo[3.3.0.$0^{3,7}$]oct-1(5)-ene, synth, chemical trapping and dimerisation of, 8601, 8605
1,4-dioxene, use in synth of highly functionalised AB taxane ring system, 7013
enantioselective radical-chain hydrosilylation of – using chiral thiol catalysts, 9123
hydroboration of – and alkynes with pinacolborane catalysed by transition metals, 3283
isosafrole, oxidation by sodium hypochlorite catalysed by manganese porphyrins, competition between epoxidation and *O*-dealkylation, 1091
nitroalkenes derived from (*R*)-2,3-isopropylidene glyceraldehyde, cyclopropanation and addition reactions of, synth of *syn*-nitrocyclopropanes, 6307
perfluoroalkylated triphenylethylenes, synth by reaction of perfluoroalkylated dithioketals with phenyllithium, oxidation of resulting vinyl sulfides and further reaction with phenyllithium, 5905, corrig. 7665
α-phenyl-β-nitrostyrene and β-nitrostyrene, reaction with Grignard reagents, synth of hydroximoyl halides or nitrile oxides, 6339
bis-pyranoside alkenes as templates for the assembly of tetrahydrofurans by prep of a bis-THF diol core structure, 3619
regio- and stereo-selective epoxidation of – by methyl trioxo-rhenium and urea-hydrogen peroxide, 2717
resveratrol (3,5,4'-trihydroxystilbene), isolation of a symmetrical bicyclo[6.6.0]tetradecane resveratrol tetramer from stalks of *Vitis vinifera* (Vitaceae), 4697

stepwise hydroboration of using (±)-isopinocampheyldichloroborane, synth of unsymmetrical ketones, 1763
stereoselective radical additions to –, the Curtin-Hammett principle, 351
styrene derivs, aziridination of by using (salen)-manganese(III) complex as catalyst, 9245
terminal –, ethylmagnesiation of catalysed by zirconocene dichloride CpCp'$ZrCl_2$ (Cp'= 1-neomenthyl-4,5,6,7-tetrahydroindenyl), 7139
endo-thioester substituted norbornenes, cyclisation of followed by methylthio group rearrangement, synth of a diacetal trioxa-cage compd, 8209
transposed – from allylic alcohols, Mitsunobu hydrazination and diazene formation, 4841
tritiated alkenes *via* Shapiro reaction, 2923
vinylogous glyoxylates, asymmetric carbonyl-ene reaction with catalysed by a binaphthol-derived chiral titanium complex, application to the synth of chiral isocarbacyclin analogues, 8515
see also Enamines, Enamides, Enols and derivs, Olefins

Alkenyl halides
chloro-dienes and -trienes, synth from propargylic alcohols *via* Pd-catalyzed rearrangement of allylic acetates, 6547
vinyl iodides, synth by iodo-desilylation of vinylsilanes, conditions for effective use of *N*-iodosuccinimide, 8647

Alkenylation
2-chloro-quinoline, Pd-mediated substitution, 8281
of organomanganese reagents in the presence of $Fe(acac)_3$, synth of the substituted olefin, 1773

Alkylation
active methylene compounds, – by Mitsunobu reactions, 2459
addition of allyl-H to dihydropyridines, reductive 2,6-dialkylation of pyridines, 1317
γ-alkylation at C-9 in the abietane framework and subsequent aldol reaction, synth of the scopadulcic acid skeleton; ring-D formation by intramolecular aldol and alkylation reactions, 8459, 8463
bis-alkylation of a glycine t-butyl ester Schiff base, synth of 1,1'-binaphthyl-substituted α-aminoisobutyric acid, a new chiral atropisomeric α,α-disubstituted glycine, 2971
meso-alkylation and reduction of *meso*-tetraphenyl- and octaalkylporphyrins, synth of phlorins, 7699
allylic alkylations using chiral sulfoximine/Pd-complexes as catalysts, 3985
of aromatic amines and related compds using a copper(II)-aluminium(III) couple, 3295
asymmetric α-alkylation of chiral ω-aminoalkyl-oxazolines, synth of enantiomerically pure ω-amino acids, 359
of benzopyrano-isoxazolidines, synth of cyclohexylidene alcohols, aldehydes and ketones and also fully reduced polypropionate units including (+)-siphonarienone, 1077, 1081
of chiral β-lithio enol ethers, 7255
competition between epoxidation and *O*-dealkylation in reaction of isosafrole with sodium hypochlorite catalysed by manganese porphyrins, 1091
of the dianion of 3-oxo-13-tetradecanolide, 5069
of the dianion from 3(*S*),2(*R*)-3-hydroxyproline ethyl ester with LDA, synth of α-alkyl-β-hydroxyproline derivs, 5441
diastereoselective – of enolate dianion of (*S*)-4-carbethoxymethyl-2-oxazolidinone, 5723
gem-dibromocyclopropanes, dialkylation with trialkylmanganate, $MnCl_2$-catalyzed reaction with RMgBr, 5377
N-diphenylmethylidene (3-pyridylmethyl)amine, lithiation, –, in synth of minor tobacco alkaloids, 1137
Freidel-Crafts reaction of chlorobenzotrifluorides with aromatic compds to afford 1,1-dichlorodiphenylmethanes, 4063
and hydroxy-alkylation reactions of lithium derivs of chiral phosphine oxides, 7461, 7465
intramolecular – of styrene-alkyllithium adducts by *o*-benzyloxy and -allyloxy groups, synth of *o*-substituted phenols, 4209
intramolecular alkylation and olefin metathesis route to disubstituted azocines in scalemic form, 4317
methoxymethylation of 3-hydroxy-5-phenylisoxazole, selective formation of *N*- or *O*-substituted products, 6857
N-methylation of β-amino alcohol by $NaBH_3CN$ reduction of derived *N*-Boc-oxazolidine, 6557
Ni-catalysed alkylation and hydride addition of allylic ethers, regioselectivity, 3613
of oxiranyllithium compds by reaction with α-alkoxy alkyl triflates, synth of substituted epoxides, 2605, corrig. 6959
of 6-oxopipecolate deriv with iodoacetonitrile, synth of constrained analogues of (*S*)-lysine, 1875

palladium-catalysed cascade cycloaddition/formal Friedel-Crafts vinylation/alkylation reactions using alkyne substrates, 3399
of pentafluorobenzene by propane in the presence of aprotic organic superacids CBr_4nAlBr_3 (n = 1 or 2), 3363
permethylation of β-cyclodextrin, all but one 6-hydroxy group, use of t-butyldimethylsilylation, 6831
α-phenylthioalkylation of silylated nucleophiles using α-(benzotriazolyl)methyl phenyl thioethers, 6631
photochemical dichloromethylation of methylarenes, synth of the corresponding dichloromethyl analogues, 8217
remote asymmetric induction in – of propionate group attached to carbohydrate template, 2061
sequential nucleophilic and electrophilic – of 1,3-dicarbonyl compds with a trimethylenemethane zwitterion equivalent, 471
solid phase reductive – of secondary amines using borane-pyridine complex (BAP), 4819
of stannylene acetals with 1,2-dibromoethane to provide tetrasubstituted triethylene glycols or with 2-chloroethanol to produce disubstituted triethylene glycols, 433
C_2-symmetric dimethyl 2,2'-bisdiphenylphosphinoferrocene-1,1'-dicarboxylate, synth and use as chiral ligand in Pd-catalyzed allylic –, 7995
tandem bis-alkylation strategy to cyclize the indoline heteroring of indoline 2,2-biscarboxylates from *N*-trifluoroacetamide and diethyl bromomalonate, 6965
p-toluenesulfonamide, – by Mitsunobu reactions, 2457
"triple allylic strain-controlled" intramolecular lactam enolate S_N2' alkylation for asymmetric synth of (+)-isonitramine, 1433
of Troeger's base by complexation with boron trifluoride etherate followed by treatment with n-BuLi, reaction of the resulting anion gives alkylation products, 6267
unusual – of amines, acids and phenols by alkyl (triphenylphosphoranylidene)acetates, 1233
vinylic sulfones, – to form α-alkyl allylic sulfones using phosphazene base P_4-t-Bu, 5249
see also Benzylation, Cyclopropanation

Alkynes

3-acetyl-5-hexyn-2-one, reaction with aryl iodides under carbon monoxide, synth of various 2,3,5-trisubstituted furans depending on the alkyne/aryl iodide ratio, 6811
acetylene derived azatitanacyclopentene complexes, reaction with carbon monoxide, synth of substituted pyrroles, 7787
acetylenes, semi-hydrogenation of over Pd-catalyst on BER in the presence of CsI, synth of the corresponding olefins or *cis*-olefins, 8527
acetylenic esters, cyclization reactions with 2-aminoindoles, 4931
acetylenic esters, reaction with 4-silyloxy-1,3-oxazin-6-ones by, synth of 2-pyridones, 4973
acyclic enediynes, dienynes, dienediynes, by Pd-catalyzed hydrostannation and ene-yne couplings, 7971
N-alkyl-3-hydroxy-3-propargylisoindolin-1-ones, ring enlargement of by treatment with Lewis acids, synth of 2-benzazepine-1,5-diones, 393
N-alkyl-*N*-vinylpropargylamines, thermal rearrangement into 2-methylpyrroles, synth of annulated[*b*]pyrroles, 6709
1-alkyn-5-ols, reaction with tetrahydrofuran-tungsten pentacarbonyl, cyclisation to the corresponding tungsten dihydropyranylidene carbenes, subsequent conversion into α-stannyl dihydropyrans, 4675
1-alkynes, reaction with amino vinyl chlorides, synth of terbinafine, an antifungal with (*E*)-1,3-enyne moiety, 57
alkynyl sulfones, synth *via* sonochemical coupling between alkynyl halides and copper sulfinates, 3717
5-alkynyl-2-oxazoline derivs, synth by addition of nitrile oxides to cobalt-coordinated 1,3-enynes, 4341
alkynylogous glyoxylates, asymmetric carbonyl-ene reaction with catalysed by a binaphthol-derived chiral titanium complex, application to the synth of chiral isocarbacyclin analogues, 8515
alkynyl(phenyl)iodonium tetrafluoroborates, reaction with tropolones, synth of 2-substituted furotropones, 5539
1-alkynylphosphonates, synth from diethyl trichloromethylphosphonate and aldehydes *via* formation of α-chlorovinyl phosphonate intermediates, 1783
5-amino-3-pentynoic acid, analogue of polypeptide β-turn segment, synth, 6911
aryl – by Pd-catalyzed coupling of terminal acetylenes with iodoarenes and diaryliodonium salts in water, 897
asymmetric cross-couplng of biaryl 2,6-ditriflates with alkynyl Grignards and chiral Pd catalysts,

3161
azacyclopentynes by ring expansion of azetidinylidenecarbenes, 8101
benzyne-thiobenzophenone adducts by reaction of thiobenzophenones with phenyl[2-(trimethylsilyl)phenyl]iodonium trifluoromethanesulfonate in the presence of tetrabutylammonium fluoride, 8883
benzynes, synth of new aminobenzotriazoles suitable for generation of substituted benzynes, 5615
bis[1,1′-bi-(2-methoxynaphthalen)-3-yl]acetylene, synth, 4459
1,6-bistrimethylsilylhexa-1,5-dien-3-yne, reaction with substituted acryloyl chlorides/$AlCl_3$, synth of bis(silylvinyl)cyclopentenones, 8455
cascade hydrostannylation of – in α,ω-enynes followed by bis-cyclisation and Stille coupling provides exo-methylene 5/6 and 5/12-17 membered spiro- and bridged-ring heterocycles, 4413
Cu-catalyzed acylation of terminal –, 7323
chloro-dienes and -trienes, synth from propargylic alcohols *via* Pd-catalyzed rearrangement of allylic acetates, 6547
coupling of methyl 2-butynoate with 1-ethynyl-2,6,6-trimethylcyclohexene, synth of methyl 7,8,11,12-tetradehydroretinoate, 3971
dialkyl di[60]fullerenylacetylene and butadiyne, dumbell-shaped difullerenes, synth, cyclic voltammetry, 6153
1,8-diazacyclotetradeca-4,11-diyne and 1,8-diazabicyclo[6.6.6]eicosa-4,11,17-triyne, synth from 1,6-dibromohex-3-yne, 479
dienyl tert. amines, synth by termolecular Pd-catalyzed cascade insertion of allene into alkynyl iodo-arenes, 6565
diethyl α-alkynylmalonates, synth in approach to enzyme inhibitors, 861
diphenylacetylene and 1,4-di(phenylethynyl)-benzene residues as legs of tripod structures, 3825
1,3-dipolar cycloaddition of – to polymer bound münchnones, synth of tetra- and penta-substituted pyrroles, 2943
trans-disubstituted *meso*-tetraethynylporphyrins, synth by coupling acetylenic dipyrromethanes with substituted propynals, 4069
1,4-diyne, *endo-endo* intramolecular reductive cyclisation of using lithium naphthalenide followed by oxidative coupling, synth of 1,1′-bicyclopentadiene, 2983
epoxyenynes by coupling of ethynyloxiranes to enol triflates using Pd(0) and Ag(I) catalysis, 2019
formation from isoxazol-5-ones using $NaNO_2$/$FeSO_4$/AcOH, 8735
hex-3-yne-2,5-dione, cycloaddition to a π-CS_2 iron complex and 3-thioxo-1,2-dithioles, synth of intermediates which can be converted into polyacetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivs, 8861
hydroboration of – and alkenes with pinacolborane catalysed by transition metals, 3283
hydrosilylation of arylacetylenes by bisdimethylsilylacetylene and bisdimethylsilylbutadiyne, 1579
intramolecular conjugate addition of hemiacetal alkoxides to alkynoates, synth of spirocyclic enol ethers, 5707
linear koilate, synth and inclusion complexes with hexadiyne, synth and X-ray analysis, 1401, 1409
lithium ethynyl acetylide, reaction with bicyclic and tricyclic ketones followed by addition of a catalytic amount of CSA or *p*-TSA, synth of exocyclic olefinic esters, 8109
methyl propynoate addition to cyclopentene and cyclohexene, examination of by high pressure kinetics, 1417
methyl substituted C-5 propyne and C-5 thiazole oligodeoxynucleotides, RNA duplex formation by, 3959
oxo-substituted propargyl- and allenyl-stannane, intramolecular reaction with aldehyde, synth of cyclic ethers, 3059
palladium-catalysed coupling of terminal – with aryl halides under Jeffery's conditions, 5527
4-pentynones, synth by alkynylation of α,β-unsaturated ketones, base promoted reactions of, synth of substituted furans, 3387
phenylseleno acetylenes, hydroalumination reactions, 831
polyalkynes constructed stepwise onto oligopyridines, 2011
potassium carboxylates of pentynoic acids 3- or 5-substituted with an iodo-aryl moiety, cyclisation of –, synth of benzo-annulated enol lactones, 1429
propargyl alcohols, Meyer-Schuster rearrangement of, catalyzed by $MoO_2(acac)_2$ in DMSO or with added Bu_2SO, 853
propargyl ether Ti complexes, conversion into 2-(1-alkoxyalkyl) alk-2-enols, 7275
propargylic alcohols, chiral $Re(cpd)NO(PPh_3)^+$ complexes, synth, reactions, 1225
reaction with aryltellurium tribromides and

subsequent reduction, synth of (*Z*)- or (*E*)-β-bromovinyl tellurides, 7417
reaction with 1-benzylpiperazin-2-one nitrone to give Δ^4-isoxazolines and isoxazolidines, subsequent opening to 3-substituted piperazin-2-ones and 1,3-amino alcohols, 7339, 7343
regio- and diastereo-selective reaction of alkynylstannanes with α-stannyl mixed acetals, allenylcarbinol synth, 3819
rings and cages containing Si atoms and acetylenic groups, synth of Si-permethylated 1-sila- and 1,6-disila-cyclododeca-3,8-diyne, 1,6-disilabicyclo[4.4.4]tetradeca-3,8,12-triyne, and related compds, 1179
cis-selective semihydrogenation of acetylenes using a nickel boride catalyst, 1057
as substrates for palladium-catalysed cascade cycloaddition/formal Friedel-Crafts vinylation/alkylation reactions, 3399
terminal –, regiospecific hydroselenation using dialkyl-phenylseleno-alanes, 9005
terminal acetylenes, phenylation of by Ph_3BiF_2 in the presence of catalytic amounts of CuCl, synth of phenyl substituted acetylenes, 4051
terminal and electron-deficient internal alkynes, reaction with allylstannanes bearing an electron-withdrawing group at the β-position, synth of β-allyl-substituted vinylstannanes, 8539
triisopropyl α-(trimethylsilyloxy)propargyl stannanes, synth by reaction of acetyl(triisopropyl)-stannane with alkynyllithium reagents, 437
5-trimethylsilyl-2-furfuryl propargyl ethers, Diels-Alder reactions of followed by trimethylsilyl group 1,2-rearrangement and Brook rearrangement, 7395
4,17,30-trithia-[7_3](1,3,5)cyclophane, synth by coupling of propargylOTHP with 1,3,5-tribromobenzene followed by ring closure, bromination and reaction with Na_2S, 6255
vinyl radicals by addition of sulfanyl (sulfenyl) radicals to –, rearrangements and cyclization, a 1,4-radical translocation, 6583
see also Cycloalkynes, Diynes, Enynes, Enynones, Ynamines

Alkynylation
2-chloro-quinoline, Pd-mediated substitution, 8281

Allenes
allene oxides as intermediates in synth of 2-fluoromethyl- and 2-hydroxymethyl-4-alkyl furans from α-alkyl acroleins and 1-bromo-1-trimethylsilylethylene, 7437
α-allenic alcohols, enantioselective synth from diisopinocampheyl propargyl borane, 4125
allenyl diphenyl phosphine oxides, addition of hydroxylamine, synth of β-hydroxyiminoalkyl phosphine oxides and their condensation with ketones forming αβ-unsaturated oximes, 1289
bearing active methyne groups at the terminus of the carbon chain, intramolecular hydrocarbonation of in the presence of palladium catalyst, 7453
1,1-dimethyl –, insertion into C-Pd bond, synth of isopropylidene heterocycles, 7263
4,4-disubstituted conjugated allenecarboxylates, prep by Horner-Wadsworth-Emmons reaction with a phosphonoacetate reagent, 3735
enyne allenes, Diels-Alder reactions of, synth of benzofluorene and 10*H*-indeno[1,2-*g*]quinoline derivs, 999
enyne-allene thermolyses, steric effects in, switch from the Myers-Saito reaction to the C^2-C^6-cyclisation and DNA strand cleavage, 7691
(4*Z*)-1,2,4,6-heptatetraenes, synth by boron methodology and isomerization to 5-methylene-1,3-cyclohexadienes, 4087
2-iodoaryl –, Pd-catalyzed [4+2] cycloadditions, synth of naphthalenes and fused dihydronaphthalenes, 4251
oxo-substituted allenyl- and propargylstannane, intramolecular reaction with aldehyde, synth of cyclic ethers, 3059
ozmium tetroxyde-catalysed dihydroxylation of – in the presence of *N*-methylmorpholine oxide, synth of α-ketols, 3335
palladium-catalyzed cyclization/allene insertion/anion capture cascades, 4221
(all-*E*)-(3*S*,5*R*,6*R*)-paracentrone, C_{31} allenic carotenoid from sea urchin, synth, 3887
Paterno-Büchi reaction with aldehydes, substituent effects on regiochemistry, 8651
propargylic-allenic lithium derivs from intermolecular carbolithiation of silylated enynes, subsequent conversion to allenic zinc derivs, 6689, 6693
regio- and diastereo-selective reaction of alkynylstannanes with α-stannyl mixed acetals, allenylcarbinol synth, 3819
steroidal allene synth and epoxidation to a bis-epoxide using dimethyldioxirane, 3417
termolecular cascade insertion of allene into alkynyl iodo-arenes catalyzed by Pd(0), anion capture reactions forming dienyl tert. amines, 6565
thermal behaviour of 2,4,5-hexatrienenitriles, 839
thio- and silyl-allenes, Lewis acid-promoted reac-

tions with 1,4-benzoquinones, 327
see also Phosphaallenes
Allylation
addition of allyl-H to dihydropyridines, reductive 2,6-dialkylation of pyridines, 1317
of aldehydes with allyltributyltin using dibutyltin dichloride as catalyst, synth of protected and free homoallylic alcohols, 3955
allylation/Cope rearrangement sequence for synth of γ-chiral α,β-unsaturated acid derivs, 8895, 8899
allylic alkylation of dimethyl malonate, Pd(II) complex with chiral pyridine-bisphosphine ligand in asymmetric reaction, 4475
aryl alkyl sulfoxides, radical carboxyallylations, stereochemistry, 8387
asymmetric – of aldehydes with BINOL-Ti(IV) complex accelerated by *i*-PrSSiMe$_3$, 7095
asymmetric – of aldehydes catalysed by substoichiometric amounts of chiral phosphoramides, synth of chiral homoallylic alcohols, 5149
asymmetric conjugate – of *N*-(8-arylmenthyloxycarbonyl) 2,3-dihydro-4-pyridones catalyzed by $TiCl_4$, importance of aryl group to diastereoselection, π-stacking effect, 9063
of carbonyl compds with allyl bromide mediated by a vanadium(II) complex, 7083
of carbonyl compds and Reformatsky-type reaction with manganese metal activated by catalytic amount of $PbCl_2$ and Me_3SiCl, 7049
of carbonyls or imines using the allylic tin(IV)-tin(II) chloride-acetonitrile system, 5951
Cd metal for synth of βγ-unsaturated ketones from allylic bromides and acid chlorides, 9087
2-functionalised allyl tris(trimethylsilyl)silanes as radical-based allylating agents, 6383, 6387, 6391
indium-mediated –, intramolecular carbocyclisation of α-bromomethyl-ω-oxo-αβ-unsaturated esters in aqueous media, synth of fused α-methylene-γ-butyrolactones, 5341
α-ketoester *O*-benzyl oximes, enantioselective allylation using allylzinc and external chiral ligand, α-(benzyloxyamino)-ester synth, 8997
malonic ester, – using allylic acetates and aminophosphine or bis(aminophosphine)-Ni(0) catalysts, 6105
radical – of non-protected β-hydroxy esters after formation of chelated aluminium alkoxides upon treatment with $MeAlR_2$, 6335
γ-*syn*-selective carbonyl allylation by 1-bromo-2-butene with tin(II) iodide and tetrabutylammonium bromide, 7103
trialkylchlorosilanes with B(OTf) form "supersilylating agents", potent reagents for allylsilane/aldehyde additions and Mukaiyama aldol reactions, 9401
zinc-mediated – of acid chlorides, synth of α,β-unsaturated ketones, 1109
Aluminium and compds
cascade carboalumination of 2-alkyl dienes and related trienes with Ti(IV) catalysis, 3803
copper(II)-aluminium(III) couple for alkylation of aromatic amines and related compds, 3295
dialkyl-phenylseleno-alanes, regiospecific hydroselenation of terminal acetylenes, 9005
2,3-epoxypropyl amines, ring-opening and alkylation by organo-Al reagents, synth of 2-substituted 3-amino alcohols, 6177
hydroalumination of phenylseleno acetylenes, and ketene butyltelluro(phenylseleno)acetals by Al/Te exchange reaction, 831
1,4-naphthoquinones, cycloaddition to styrenes promoted by Me_2AlCl or $MeAlCl_2$, cyclobutanaphthalenedione products, synth of 6,11-dimethoxy-5-phenylnaphthacene-1,4-quinone, 9397
trialkylalanes as alkyl source in Pd-catalyzed alkyl-dechlorinations of chloroquinazolines, 1309
triisobutylaluminium complex of cysteamine HCl, condensation with a variety of carboxylic esters, synth of thiazolines, 2935
trimethylalane, catalyst of *O*→*S* rearrangement of secondary alkyl *S*-methyl xanthates, 2695
Amadori reactions
intramolecular adaptation of the Amadori reaction for synth of piperidin-3-ones, 2939
Amidation
photo-triggered selective C-terminal *N*-methylamidative cleavage of polyethyleneglycol-bound peptides, 6421
Amides
3-acetamido-3-alkyl azetidines and pyrrolidines, 3- and 4-acetamido-4-alkylpiperidines, synth by Ritter reactions from the corresp. hydroxyamines, 1297
2-acyl-*N,N*-dialkyl-naphthamides, diastereoselective additions to, asymmetric induction using atropisomers, 5577
adenosine-5'-*N*-ethyluronamides with modified 6-amino group, synth, 1567
N-alkenyl acetoacetamides, synth by reaction of imines with 2,2,6-trimethyl-4*H*-1,3-dioxin-4-one, 7429
N-alkyl (aralkyl) amides, from benzyl esters

using Amano PS-30 lipase, 7913
amides and ketones, fluorination or hydroxylation of non activated C-H bonds in − using CCl_4 or NBS in superacids, 2967
4-amidocyclopent-2-enecarboxamides,*cis*-dihydroxylation by OsO_4/NMMO, unexpected stereoselectivity, 4601
amidoxime, condensation with carboxylic acids in the presence of a peptide coupling reagent in diglyme, synth of the corresponding substituted 1,2,4-oxadiazoles, 6627
amidoximes, horseradish peroxidase oxidation, isolation and structure of *O*-(arylimidoyl) arylamidoximes, 3113
amino-amides, modified Wang resin for solid-phase synth, 3213
(±)-(*Z*)-2-aminomethyl-1-phenylcyclopropane-*N,N*-diethylcarboxamide ((±)-milnacipran), synth of (+)- and (−)-milnaciprans, 641
meso-aminoporphyrin derivs, − with Mosher acid, fluorescence in cells for use in PDT, 7511
axially chiral twisted amides, 4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, for kinetic resolution of *sec*-alcohols, 6777
N,O-bis(t-butyldimethylsilyl)acetamide for efficient t-butyldimethylsilylation of alcohols, 605
by hydration of nitriles catalyzed by fluoroapatite (natural phosphate) doped with KF and trisodium phosphate, 6555
capsaicin analogs, synth using liver acetone powder from vanillylamine and fatty acid esters, 2789
carbopeptoids with 1,2'-CO-NH links between sugar residues, 1575
chemoselective reduction of aroyl azides to − using Fe-$NiCl_2.6H_2O$, 4559
chiral amidophosphine ligand, structural requirements for asymmetric reaction of lithium dimethylcuprate with chalcone, 7805
conagenin, immunomodulator, synth of two diastereomers, 2499
control of enzyme hydration in amide bond formation using penicillin amidase, 9377
cyclic oligomers (n = 3-6) of *N*-methyl-*m*-aminobenzoic acid, synth, conformations, 5003
N-desulfonylation of *N*-acyl alkene and arenesulfonamides using Bu_3SnH/AIBN, 1667
syn- and *anti*-diastereoisomers of 4-aryl-2,3-dimethyl-4-oxobutanamides by β-acylation of α-methylbutanamide, 1045
diastereoselective iodohydroxylation of γ δ-unsaturated −, proposed absence of involvement of iminium ion intermediate, 6843
diazoacetamides of 2-substituted-pyrrolidines, rhodium-catalysed carbon-hydrogen insertion of, synth of (1*S*,8*S*)-1-hydroxypyrrolizidin-3-one and (−)-heliotridane, pyrrolizidine bases, 1371
differential hydration of *E*- and *Z*- conformers of t-butylformamide by intermolecular ^{13}C-^{1}H nOe, 6569
N,N-dihexyl-2-alkyl-1-naphthamides, synth by deprotonation of *N,N*-dihexyl-1-naphthamides, 2899
N,N-diisopropyl αβ-unsaturated−, deconjugation, role of base and solvents, 5261
dilithiated (*E*)-*N*-isobutyl-4-tosyl-2-butenamide, allyl sulfone dianion for the regiospecific γ-functionalisation of crotonamide dianion, synth, 4787
N,N-dimethyl tertiary amides, synth by reaction of η^3-allyltitanium(III) complexes, generated from dienes, with dimethylcarbamoyl chloride, 33
dimethylaluminium amide, reaction with pinyl substituted Hantzsch ester, formation of NADH model compds, subsequent reduction of methyl benzoylformate with these models yielded both enantiomers of methyl mandelate, 3275
fluorine NMR to monitor − formation in solid gel phase, 7649
formamides from alcohols by Ritter reaction using trimethylsilyl cyanide, 8129
glycine-derived diazo acetoacetamide, Rh(II)-catalysed decomposition of, ligand-dependent site selectivity in, 6981
halo or nitro amidoxime, isomerisation/cyclisation of, key step in synth of 3-(4-pyridinylamino)-1,2-benzisoxazoles, 995
hydrogenation of amides by the use of bimetallic catalysts consisting of group 8-10 and group 6 or 7 metals, 6749
hydrolysis of cyanohydrins, assistance from β-sulfinyl group with concomitant deoxygenation, 4569
β-hydroxy amides and thioamides, cyclodehydration of using PEG-supported Burgess reagent, synth of oxazolines and thiazolines, 4659
N-isopropyl-5-tosyl-4-pentenamide, precursor to δ-acyldienyl anion equivalent, synth of 6-hydroxy-2,4-dienamides, 2833
lithium amidotrihydroborate, synth and use as a reducing agent, 3623
metal amide reaction with 1,3-diselenanes, synth of 2-metallo-diselenanes bearing the metal in

equatorial position, 2667
2-methoxycinnamanilide which could be converted to 2'-hydroxy-3,3-diphenylpropionanilide, synth by reaction of 2-methoxyaniline with cinnamoyl chloride, 6369
(2*E*)-4-methoxy-2,4-pentadienamides, synth, reactivity in Diels-Alder reactions, 3595
Mosher –, synth using carbodiimide on solid support, 7171
nitrogen-fused polycyclic amides, synth by reductive cyclisation of *N*-iodoalkyl cyclic imides induced by samarium diiodide, 2577
NSTX-3, polyamine amide spider toxin and glutamate receptor antagonist from *Nephila clavata* orb-web spider, total synth allowing putreanine moiety to be incorporated first, 551
N-3-oxoalkylamides, cyclisation of, synth of 6-acetoxy-5,6-dihydro-4*H*-1,3-oxaziniumperchlorates, subsequent reaction with sodium hydrosulfide results in *N*-3-oxoalkylthioamides, 5203
peptide aminoalkylamides, solid phase synth using an allyl linker on MBHA resin, 3031
phthaloyl protection of amines, selective deprotection using phthalyl amidase, 7469
2-silyl benzamides, conversion into 2-fluorosilylacetophenones by treatment with LDA driven by CIPE-facilitated α-silyl carbanion formation and rearrangement, 2915
substituted tosylmethyl formamides, synth as intermediates to substituted tosylmethyl isocyanides, 8113
tartaric amides by dimerisation of α-keto amides using samarium diiodide, 7755
trifluoropyruvamides, synth and Friedel-Crafts reaction of the hydrate forms with aromatic compds, synth of fluorinated glycolic acid derivs, 375
trimethoxy-*o*-aroyldiphenylphosphoryl methylbenzamide, cyclisation of, synth of (±)-cherylline and (±)-cherylline dimethylether (*Amaryllidaceae* alkaloids), 3697
α,β-unsaturated amides, DI-selective reductive coupling/Dieckmann condensation sequence of with samarium(II) iodide/HMPA, synth of *trans*-1,2-cyclopentanediyl-2,2'-biphenol, 8505
urethano-, amido- and sulfonamido-[60]fullerenes by nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, 4683
Wacker aminocarbonylation of unsaturated –, synth of pyrrolidinylacetic esters, 2-oxooxazolidin-4-ylacetic esters, fused dihydropyrimidine-2,4-diones, 7287
see also Enamides, Lactams, Peptides and polypeptides

Amidines
amidine-linked pseudo-disaccharide, construction of by two routes, 5921
by Diels-Alder reactions of aminoheterocycles with formaldehyde and electro-rich alkenes, 2615, 2619
carbamidinocyclopentadiene-$Cr(CO)_2(NO)$, attachment to a protein, 6561
cyclic – from reduction of 2-(β-cyanoalkyl)-oxazolines, synth of (*S*)-4-methylpyrrolidin-2-one from (*R*)-phenylglycinol derived oxazoline, 3993
heterocyclic –, reaction with benzotriazole and ethyl flyoxylate or ethyl glyoxylate, synth of 3-amino-2-ethoxycarbonyl imidazo[1,2-*a*]pyridines *via* α-benzotriazolyl-α-amidino esters, 1787
β-trifluoromethyl vinamidinium salt 1,1,5,5-tetramethyl-1,5-diaza-3-(trifluoromethyl)-1,3-pentadienium chloride, synth from 3,3,3-trifluoropropanoic acid, 1829

Aminals
4,10-dioxatricyclo[5.2.1.$0^{2,6}$]dec-8-en-3-amines, masked imines and iminium ions, addition of Grignard reagents, 8729
peptidyl argininals, general synth, 4109

Amination
amination of polymer-bound aromatic bromides with primary and secondary alkyl- and arylamines, synth of arylamine products after cleavage from the support, 6993
ε-*N*-aminolysine, synth on solid phase by *N*-, incorporation into peptides, 7259
aminolysis of oxiranes catalysed by lithium trifluoromethanesulfonate, 7715
Leuckart reductive – of carbonyl compds, enhancement of by microwave heating, 8177
Mitsunobu *N*-tosylamination of a chiral benzylic alcohol, 5329
reductive – of methyl 9-ketododecanoate, synth of 9-propyl-10-azacyclododecan-12-olide, component of defensive secretion of Mexican bean beetle, 2141
reductive – of nitroimidazolyl acetaldehyde using diamines, synth of tertiary diamines, 6081
reductive – of substituted cyclohexenones with sodium triacyloxyborohydrides, synth of protected axial amines, application to prep of 3-*endo*-tropanamine, 3977
two methods for –, synth of (2*S*,3*R*)- and (2*R*,3*R*)-*m*-chloro-3-hydroxytyrosines, vancomycin

amino acids, 7967

Amines

2-acetylaniline derivs, synth by photolysis of 3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivs *via* arylnitroxyl radicals, 2895

β-alkoxy substituted phenethylamine analogues, asymmetric synth from 2-chloroacetophenone, 3045

N-alkyl-*N*-vinylpropargylamines, thermal rearrangement into 2-methylpyrroles, synth of annulated[*b*]pyrroles, 6709

γ-amino α,β-unsaturated dimethyl acetals as direct precursors of (*E*)-1-methoxy-2-methyl-amino-1,3-butadiene and the corresponding bis-dienes, subsequent Diels-Alder reactions of, 8169

amino esters, oxidation and chiral recognition of by dioxoruthenium(VI) porphyrins, formation of new imino ester Ru(II) complexes, 6701

γ-amino olefins, synth by ring-opening of *N*-tosyl phenylaziridines with allylsilanes in the presence of $BF_3.Et_2O$, 8493

α-amino phosphonate monoesters, synth from phosphonic acid using BroP or TPyC1U as activating agent, 3997

3-amino-1,4-benzodiazepin-2-ones, prep *via* azidation utilising triisopropylbenzenesulfonyl azide, 6685

2-amino-1,5-dihydro-4*H*-pyrrolo[3,2-*d*]-pyrimidin-4-one (9-deazaguanine), synth from ethyl-(ethoxymethylene)cyanoacetate and diethyl aminomalonate, 4339

3-amino-2-ethoxycarbonyl imidazo[1,2-*a*]pyridines, synth by reaction of heterocyclic amidines with benzotriazole and ethyl flyoxylate or ethyl glyoxylate *via* α-benzotriazolyl-α-amidino esters, 1787

β-amino-α,α-difluoroketones, synth by reactions of 1,1-difluorovinyl methyl ethers with *N*-acyliminium salts derived from reaction of biscarbamates with trifluoromethanesulfonic anhydride, 1061, corrig. 2515

amino-amides, modified Wang resin for solid-phase synth, 3213

α-amino-β-lactams, microwave-assisted synth using the tetrachlorophthalimido group as a masked amino substituent, 6989

β-aminoacrylates, radical cyclisation of, synth of indolizidine alkaloids 167B and 209D, 1445

N-(α-aminoalkyl)benzotriazoles, Mannich-type reaction with silyl enolates, synth of the corresponding β-amino ketone or ester derivs, 3731

N-Boc-aminobenzotriazole, double deprotonation of, prep of new aminobenzotriazoles suitable for generation of substituted benzynes, 5615

trans-3-(2-aminocycloalkyl)indoles, conformationally constrained serotonin analogues, synth by ring opening reaction of *N*-Boc cycloalkylaziridines, 683

aminoethanethiol, reaction with D-ribofuranose followed by cyclisation, synth of castanospermine and australine analogues, 49

aminoheterocycles, Diels-Alder reactions with formaldehyde and electro-rich alkenes, synth of cyclic amidine and isothiourea skeletons, 2615, 2619

(2-aminohomodiene)tricarbonyliron(0) complexes by deprotonation and rearrangement of (1-heterodiene)tricarbonyliron(0) complexes, 691

1-aminomethyl-1-t-butyl-2-methoxy-2-(3-methoxyphenyl)ethylenes, oxygenation of, effect of allylic nitrogen on the reaction pathway and chemoselectivity, 8191

6-aminomethyl-4-oxo-4,5,6,7-tetrahydroindoles, synth from 2,5-dimethoxybenzoic acid as CNS agent precursors, 5171

1-aminophosphonic acids, synth by reduction of 1-hydroxyiminophosphonates with $NaBH_4$ in the presence of molybdenum or nickel, 407

aminopyranones, synth by chemo-, regio- and stereoselective transformation of substituted tosylpyrrolidinones using tetra-*n*-butylammonium fluoride, 8173

aminopyridazines by reduction of the corresponding azidopyridazines using Fe/NH_4Cl in organic solvent-water two-phase solution, 7059

erythro-ω-aminosphingosine, synth from L-serine and its coupling to Affi-Gel 10 to create an affinity column, 3279

anilines, *N*-methylguanylation of, synth of bis-Boc protected *N*-methylguanidines, 6815

anilines, reaction with ethyl (methylsulfinyl)acetate and oxalyl chloride, modified Gassman oxindole synthesis, 4631

aromatic amines and related compds, alkylation of using a copper(II)-aluminium(III) couple, 3295

aryl amines, synth by Pd-catalyzed coupling from aryl bromides and amines, 7181

arylamine products from amination of polymer-bound aromatic bromides with primary and secondary alkyl- and arylamines, 6993

azatriquinane, azatriquinacene, synth from pyrrole and dimerisation by *N*-oxidation, 131

1,2-benzodithiol-3-one 1-oxide, reaction with primary amines, synth of 2-substituted 1,2-benzisothiazol-3(2*H*)-ones, 5337
bistrifluoroethylanilines from aroyl azides with $NaBH_4$/TFA, 7213
bulky amines, condensation with ethyl acetoacetate or 2,4-pentanedione, synth of enaminoketones activated by high pressure or catalysis by ytterbium triflate, 3691
calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units, synth in order to capture C_{60} in organic solution, 73
carboranyl spermidines and spermines, synth as potential BNCT agents, 9283
chemoselective reduction of aryl azides to − using Fe-$NiCl_2.6H_2O$, 4559
chiral amine ligand for enantioselective Michael reaction of ketone lithium enolates, 6343
complex hydride reduction of *N*-(2-hydroxy-2-phenylethyl)-*N*-(3-oxo-3-phenylpropyl)-benzylamine, bicyclic chelate structures controlling diastereoselection, 7897
α,ω-contrafunctional amines, 1:1-cyclocondensation of, synth of dibenzo-diaza-crown ethers, 2213
cyclic −, synth by Mitsunobu cyclizations, 2463
deamination of aromatic − by NO, 4165
diamines and a C_2 symmetric triamine, synth from (*R*)-styrene oxide, 5619
diaminopyrans by oxidative azidonation of glycals using $PhIO/TMSN_3$ reagent combination, 303
1,3-bis(diarylamino)benzenes, synth as model precursors for 1D organic ferromagnetic metals: cyclic voltammetry and electron spin transient nutation spectroscopy to characterise the dications, 9207
N,N-dibenzyl α-amino aldehydes, condensations with nitroalkanes mediated by tetrabutylammonium fluoride, synth of acyclic 1,3-diamino-2-alcohols, 987
dienyl tert. −, synth by termolecular Pd-catalyzed cascade insertion of allene into alkynyl iodoarenes, anion capture reactions, 6565
diethylenetriaminepentaacetic acid, synth of all-carboxylate free DTPA derivs by palladium catalysed reaction of allylic carbonates with a mono-ethoxycarbonyl adduct, 539
N-diphenylmethylene benzylamines, reaction with aldehydes, synth of β-aryl-β-aminoalcohols, 945
DMAP-catalysed reaction with di-t-butyldicarbonate and alcohols, synth of carbamates, 5861
EDTA and DTPA analogues of dipalmitoylphosphatidylethanolamine as lipophilic chelating agents for metal labelling of LDL, 4685
enzymatic resolution of − and amino alcohols using pent-4-enoyl derivs, 6287
2,3-epoxypropyl amines, ring-opening and alkylation by organo-Al reagents, synth of 2-substituted 3-amino alcohols, 6177
from cyclisation of acyliminium salts derived from Friedel Crafts reaction of a pyroglutamic acid deriv, 485
guanylation of − by *S*-methyl-*N*-arenesulfonyl isothioureas, 8711
2-halophenols and -anilines, reaction with vinyl halides or triflates and CO, synth of 3-spiro-2-oxindoles and 3-spiro-2(3*H*)-benzofuranones, 695
homoallylic − by allylation of imines with allyl bromide using Mg or Zn, 4187
N-hydroxy-α-amino phosphonate derivs, potential haptens for eliciting catalytic antibodies, synth by Mitsunobu reaction with *N*-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine and α-hydroxyphosphonates, 6331
iminium ions and amino-substituted radicals derived from threonine, stereoselectivity of the reactions of, 2569
linear bola-amphiphilic octaamine with *N*-adamantylmethyl groups, synth, effect on liposome proton transport across bilayer, 6465
metal-catalyzed diazo transfer from triflyl azide to −, synth of aliphatic azides, 6029
1,2-bis(*N*-methoxy-*N*-nitrosoamino)cycloalkanes, thermolysis of, synth of 4,5-dihydro-1,2,3-triazole 2-oxides, 5997
2-methoxyaniline, reaction with cinnamoyl chloride, synth of 2-methoxycinnamanilide which could be converted to 2′-hydroxy-3,3-diphenylpropionanilide, 6369
5(*N*-methylbenzoylamino)-2,2,6,6-tetramethylheptan-3-ol as a new class of recoverable chiral auxiliary, 1863
N_2S_2 conjugated BAT phenyltropane ligand (BAT = bis(aminoethanethiol)), synth as a potential technetium-99m imaging ligand for dopamine transporter, 4353
N-[ω-(*p*-nitrophenoxy)alkyl]anilines, photoinduced through-bond electron transfer and rearrangement in, 505
nonracemic 3- and 4-amino furans bound to polystyrene, Diels-Alder reactions of, comparison to their solution state analogues, 2133
oxidation of *p*-phenylenediamine in presence of

anilines, synth of *N,N'*-bis(4-amino/dimethylamino-phenyl)-1,4-quinonediimine, 731
oxidation to nitro compds using methyltrioxo-Re(VII)/H_2O_2, 805
8-oxo-7,8-dihydro-6-*O*-methyl-2'-deoxyguanosine, synth from 2'-deoxyguanosine and use as a probe to study DNA-base excision by MutY enzyme, 9
ortho- and *para*-perfluoroalkylanilines, base-mediated reactions of, synth of quinolines and methanes, 4655
phthaloyl protection of –, selective deprotection using phthalyl amidase, 7469
polysubstituted anilines by [4 + 2]-cycloaddition of methyl 5-aminofuroate followed by dehydration of the cycloadducts, 2903, 2903
primary and secondary alkylamines, reaction with 4-chloro-5*H*-1,2,3-dithiazol-5-thione, synth of *N*-alkyl- and *N,N*-dialkylcyanothioformamides, 3709
N-protected α-aminoalkylphosphinic acids, synth by a three-component condensation reaction of benzyl carbamate, an aldehyde and an alkylphosphonous acid, 4335
protected axial amines, synth by reductive amination of substituted cyclohexenones with sodium triacyloxyborohydrides, application to prep of 3-*endo*-tropanamine, 3977
pseudoceratidine, antifouling spermidine deriv from marine sponge *Pseudoceratina purpurea*, structure, 1439
4-pyridinemethanamines by aminoalkyl-decyanation of 4-pyridinecarbonitrile with imines, 3009
$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
secondary – by reductive alkylation of *o*-nitroanilines in presence of ketones, 6045
secondary amines, methyltrioxorhenium catalysed direct oxidation of, synth of nitrones, 6025
solid phase reductive alkylation of secondary – using borane-pyridine complex (BAP), 4819
4-substituted aminoisoxazoles, synth by lithiation of 3-(Boc-amino)isoxazole and 5-(Boc-amino)isoxazole, 3339
δ-(sulfonylamino)-α-epoxy ketones, conversion to bicyclic ketopyrroles *via* intramolecular conjugate-addition to azoene intermediates, synth of bicyclic core of the 1-azafulvene roseophilin, 2545
tertiary –, acryloyl polystyrene resin for solid-phase synth, 3209
6-tertiary amino uracils, reaction with dimethyl acetylenedicarboxylate, synth of 4,5-dihydropyrrolo[2,3-*d*]pyrimidine and 4,5,6,7,8-pentahydropyrrolizino[2,3-*d*]pyrimidine analogues, 1853
tertiary diamines, synth by reductive amination of nitroimidazolyl acetaldehyde, 6081
N-(tetrahydropyridinomethyl)-*o*-bromoanilines, radical cyclization forming spiro-fused piperidines, 5233
three-component reactions with aldehydes and silylated nucleophiles, synth of β-amino ketones, β-amino esters and α-amino nitriles, 9221
N-trifluoroacylated phenethylamines, intramolecular cyclisation of, synth of 1,2,3,4-tetrahydroisoquinolines, 5453
triisobutylaluminium complex of cysteamine HCl, condensation with a variety of carboxylic esters, synth of thiazolines, 2935
α-trimethylsilylmethyl amines, PET cyclisation of with tethered non-activated olefins, synth of (–)-retronecanol, 2285
unusual alkylation of – by alkyl (triphenylphosphoranylidene)acetates, 1233
1,4-xylylene-bis(1,4,8,11-tetraazacyclotetradecane), directed synth, 5301
zeolite catalysts for aza-Cope rearrangement of *N*-allylanilines to *o*-allylanilines and to indolines, 5281

Aminium salts
substitution of acetals by silylated nucleophiles, catalysis by –, 3483

Amino acids and derivs
3β-acetoxy-28-hydroxy-18-lupene, oxidation of, synth of tricyclic products, 5187
N-acetyl-α,β-dehydrotryptophan ethyl ester produced by incubation of *N*-acetyl-L-tryptophan ethyl ester with L-tryptophan 2',3'-oxidase, configuration, 3309
acid chloride of *N*-tosyl-2'-phenethylglycine, cyclisation of in synth of (±)-*trans*-10,11-dihydroxy-5,6,6a,7,8,12b-hexahydrobenzo[a]-phenanthridine (dihydrexidine), 6971
β-alanine in peptides, stereogeometrical features, 5747
(*E*)-alkene dipeptide isostere for Phe-Gly, synth of δ– $BocNH\text{-}CH(CH_2Ph)CH{=}CHCH_2CO_2H$, 5359
α-alkyl α-amino acids with unsaturated side chains, synth by chelate-enolate Claisen rearrangement, 5351
alkyl hydrogen (acylamino)malonates, generation

of the magnesium enolates of using the $MgCl_2$/R_3N base system, subsequent reaction with acid chlorides to yield α-acylamino-β-keto-esters, 3303
α-alkyl-β-hydroxyproline derivs, asymmetric synth by alkylation of the dianion from 3(*S*),2(*R*)-3-hydroxyproline ethyl ester with LDA, 5441
α-alkyl-ω-aminocarboxylic acids and the corresponding α-alkyllactams, synth from lactams by ring transformation with a chiral aminoalcohol and α-alkylation of the resulting 2-(ω-aminoalkyl)-oxazolines, 359
α-allyl α-amino acids, chiral synth *via* α-ketoester *O*-benzyloximes, 8997
(*S*)- and (*R*)-allylglycines, synth by reaction of cyclic chiral nitrones with allyltrimethylsilane *via* isoxazolidine derivs, 1801
α-allylic α–, synth *via* Zn-mediated allylation of *O*-benzyloximes of glyoxylic acid in aqueous media; chiral modification using Oppolzer's camphorsultam derivs, 5273
α-allylic glycine derivs using $Al(OiPr)_3$/quinine catalyst in Claisen ester enolate rearrangement, 7945
alternating D-homoalanyl adenine/L-alanyl thymine building units in a peptide nucleic acid, formation of a self-pairing double strand, 475
amino acid attachment to hydroxymethyl polystyrene using a carbamate linker, conversion to amides followed by cyclisation to hydantoins, 937
α-amino acid derivs by reaction of racemic ethyl *N*-phenylsulfonyl-α-bromoglycinate with alkyl aluminium reagents, 4795
Fmoc-protected amino acids, starting material for synth of glycolate ester peptides, subsequent use for the assembly of *de novo* designed multimeric proteins using subtiligase, 6653
anti-β-amino-α-hydroxy acid derivs, synth using nucleophilic epoxidation of 1-arylthio-1-nitroalkenes, 2311
(*S*)-2-amino-N^{α}-(9-fluorenylmethoxycarbonyl)-3-(α^4,3-*O*-bis-t-butoxycarbonylpyridoxamin-5-yl) propanoic acid, synth from pyridoxamine dihydrochloride, 2129
α-aminoacid *N*-carboxyanhydrides, synth from *N*-carbamoyl aminoacids with NO/O_2, 9043
N-(α-aminoacyl) derivatives of melphalan, *p*-[di-(2-chloroethyl)amino]phenylalanine, antitumour drug, for tumour targeting, 7581
2-aminobenzoic (anthranilic) acid, dimerization under Vilsmeier conditions, *N,N*-dimethyl-2-(quinazolin-4-on-3-yl)benzamide, 5015
4-aminocyclohexane carboxylic acid, conversion to thrombin inhibitor L-370,518 *via* α-hydroxy-β-lactam, 5045
ε-*N*-aminolysine, synth on solid phase by *N*-amination, incorporation into peptides, 7259
3-amino-9-methoxy-2,4,8-trimethyl-10-phenyl-deca-4,6-dienoic acid (Adda), synth of N-Boc deriv, 2349
(*S*)-aminomethyl butanedioic acid, synth using oxazolidinone chiral auxiliary, 4277
2-amino-2-methylpropanesulfonic acid, synth, 7319
5-amino-3-pentynoic acid, analogue of polypeptide β-turn segment, synth and incorporation into polypeptide chains, 6911
2-amino-4-phosphonobutanoic acids, stereocontrolled synth using lithiated Schöllkopf bislactin ether and alkenylphosphonate esters, 5801
(2*S*,3*S*,8*S*,9*S*)-3-amino-2,6,8-trimethyl-10-phenyl deca-4,6-dienoic acid (adda), microcyctin constituent, synth of *N*-trifluoroacetyl methyl ester, 5645
γ-amino-αβ-unsaturated esters, synth by Pd-catalyzed rearrangement of α-methoxycarbonyl allyl sulfoximines, 5417
N-aryl-β-phenylisoserine derivs, synth *via* Co-catalyzed epoxidation of cinnamic acid derivs, 7311
3-arylprolines, synth using reductive cyclization of azido-olefins to form pyrrolidine ring, 4091
2-azabicyclo[2.2.1]heptane- and 2-azabicyclo-[2.2.2]octane- 3-carboxylic acids, chiral bicyclic proline analogues, synth, 7577
azomethine ylids from aldehydes and aminoacids, cycloaddition to C_{60} fullerene, 775
N-α-benzoyl-*cis*-4-amino-L-proline, a γ-turn mimetic, 1933
N-Boc *O*-benzyl protected proline oligomers, conformational stability of, 6235
1,1'-binaphthyl-substituted α-aminoisobutyric acid, a new chiral atropisomeric α,α-disubstituted glycine, synth by bis-alkylation of a glycine t-butyl ester Schiff base, 2971
β-carboxy protection of *N*-Fmoc aspartic acid as 3-methylpent-3-yl ester, 4243
2-carboxy-4-hydroxy-6-(2-amino-2-carboxyethyl) benzothiazole, synth by oxidation of pheomelanins with hydrogen peroxide, 6799
4-carboxyphenylalanine and 4-methoxycarbonyl-phenylalanine derivs, synth from N^{α}-benzyloxycarbonyl-L-tyrosine benzyl ester, subsequent use

in solid-phase peptide synth, 6661
chiral bis-oxazolines, synth from D- and L-diethyl 2,3-*O*-isopropylidene tartrates and chiral amino alcohols, use as ligands in cyclopropanation of olefins, 4073
chiral γ-amino-αβ-unsaturated esters, asymmetric dihydroxylation, tuning protective groups from mismatched to matched cases, 9293
chiral recognition of – derivatives by 1,1'-binaphthalene-8,8'-diol, association constants and binding energy differences, 4153
chiral serine derived oxazolines by reduction of *S*-(+)-silyl serine methyl ester, 1743, 1747
(2*S*,3*R*)- and (2*R*,3*R*)-*m*-chloro-3-hydroxytyrosines, vancomycin amino acids, synth, 7967
CMP-NeuNAc analogues having a glycosyl phosphonate structure, synth by nucleophilic substitution of sialyl phosphite with dimethyl trimethylsilyl phosphite followed by Mitsunobu condensation, 1451
cocaine-diamide hapten, design and synth as an anti-cocaine immune response for the treatment of cocaine abuse, 5479
constrained analogues of (*S*)-lysine, synth by alkylation of 6-oxopipecolate deriv with iodoacetonitrile, 1875
– containing Ph_2P groups, incorporation into peptides on polymer support, complexation with Rh(I) and chiral hydrogenations, 6475
cyclic oligomers (n = 3-6) of *N*-methyl-*m*-aminobenzoic acid, synth, conformations, 5003
dehydroamino acids related to the azinomycin antibiotics, synth by mono-osmylation of dehydroamino acid dimers, 447
Z-γ,γ'-di-t-butyl-D,L-carboxyglutamic acid methyl ester, hydrolysis using endoprotease papain, 417
7,7-dialkyl 3-amino-2-oxohexahydroazepine-1-acetic esters, synth, 8985
N,N'-dialkylphosphorodiamide protecting groups for Fmoc synthesis of phosphotyrosine-containing peptides, 4953
1,2-diaminopropionic acid, protected, derivatized, and incorporated into oxytocin analogue, 6861
diketopiperazine catalyst containing the amino acid (*S*)-norarginine, solid-phase synth of, 5839
N,N-dimethylvaline, solvation effects on the tautomerisation of, 6673
α,α-disubstituted α-aminoaldehydes and α-amino acids, synth using [3,3] allylic trichloracetimidate rearrangement, 2573
N-ethoxycarbonyl aziridine-2-carboxylates, regioselective ring-opening, $MgBr_2$ forming β-bromo-α-aminoester, NaX forming α-halo-β-aminoester, 6893
9-ethyladenine, prep of a simple molecular tweezer for, 7035
D,L-FDLA (1-fluoro-2,4-dinitrophenyl-5-leucine amide), application of the derivatisation to determination of absolute configuration of amino acids in peptide by Marfey's method, 3001
fluorinated glycolic acid derivs, synth by Friedel-Crafts reaction of hydrate forms of trifluoropyruvamides with aromatic compds, 375
Fmoc amino acid fluorides for the coupling of extremely hindered amino acids using a strategy which involves treatment with bis(trimethylsilyl)actamide prior to acylation, 5483
α-*O*-fucosylated Fmoc serine and threonine, building blocks for glycopeptide synth, 7645
glycine, L-valine, L-threonine, building-blocks for elsaminose, 2-amino-2,6-dideoxy-3-*O*-methyl-D-galactose, synth, 5743
glycines with diphenylmethyl, fluorenyl and adamantyl substituents, enantiopure products by Co-mediated alkylation of acetoacetyl benzyloxazolidin-2-ones, 6197
guanidino acids, synth from amino acids using protected *S*-methylisothiourea derivs, 2483
higher α-chlorovinyl and α-bromovinyl amino acids, synth from *N*-trifluoroacetyl α-vinyl amino esters, 4309
homochiral β–, synth from L-homoserine lactone, 3165
δ-hydroxyl-α-amino lactones, precursor to clavam antibiotics, synth from chiral α-furfuryl amide by Sharpless asymmetric dihydroxylation, 6371
(2*S*,3*S*)-3-hydroxypipecolic acid, synth from oxadehydroindolizidine, 4001
DL-isocysteine and derivs, synth from thiomalic acid using hexafluoroacetone as protecting and activating agent, 8159
(2S,3S) and (2S,3R) isomers of 3-fluoro-D-aspartic acid, synth from D-tartaric acid esters, 5103
β-isopropylphenylalanine, asymmetric synth, 1563
kainoid synth, stereocontrol, 6923
α-ketol amino acid precursors related to the 5-hydroxy-4-oxo-norvaline antibiotic, synth by osmium trichloride-catalysed oxidation of olefins with peracetic acid, 3333
β-lactones from *N*-tritylated serine and threonine, use of BOP, 4237
lanthionine, thioether analogue of cystine, synth

for combinatorial and solid phase peptide chemistry by Michael addition between Fmoc-L-Cys-allyl ester and Boc dehydroalanine-methyl ester, 1101

(*S*)-lysine, starting material for synth of enantiomerically pure (*S*)-bupivacaine (levo-bupivacaine), local anaesthetic, 6399

Merrifield resin-bound tryptophan, Pictet-Spengler reaction with aldehydes, synth of tetrahydro-β-carbolines, 3963, 5041, 5631

4,5-methano congeners of α-kainic and α-*allo*-kainic acids, probes for glutamate receptors 8971

2,3-methanopipecolic acid, chiral synth, 4529

(*S*)-α-methylmethionine, (*S*)-α-methylleucine, 2-aminoisobutyric acid and (*S*)-α-methylphenylalanine, incorporation into a peptide sequence and coupling reactions of, 6713

α-methylphenylalanine and α-methyl-β-phenylserine, synth by ring-opening of 2-methyl *N*-(*p*-toluenesulfinyl)aziridine-2-carboxylic acid, 5473

mycestericin D, long-chain α-hydroxymethyl-α-aminoacid with immunosuppressive properties, synth using L-threonine aldolase, 2791

N-methylation of various *N*-Fmoc-protected (α, β, ..) amino-acids using formaldehyde and triethylsilane, 263

optically active *R* phenylglycine methyl ester hydrochloride, synth from racemic phenylglycine involving addition of *R* pantolactone to the *N*-phthalyl protected phenylglycine ketene, 379

ornithine-containing macrocyclic peptide, guanidination of, synth of cyclotheonamide B, 2261

oscillatoric acid, 1,2,3,3a,8,8a-hexahydro-3a-(3-methyl-2-butenyl)-pyrrolo[2,3-*b*]indole-2-carboxylic acid, NMR and HBMC correlations in oscillatorin, cyclic decapeptide, 6873

(2*S*)-4-oxopipecolic acid, synth by rearrangement of a spirocyclopropane isoxazolidine, 4205

[2.2]paracyclophanes, synth of homochiral amino-acids with amino and carboxy groups in different rings, 1273

L-phenylalanine derivs with a vicinal tricarbonyl moiety at the *para* position of the phenyl, synth and conversion to derivs with tricarbonyl structure masked as its stable keto ylid precursor, 8475, 8479

phosphorothioic acid analogues of *N*-phospholeucinamide, 8979

phosphotyrosine mimetics, synth from the corresponding phenolic precursors, 3635

phosphotyrosine peptide (Stat $91^{695-708}$), synth using an inter-assembly phosphorylation strategy, 4765

polysialosides scaffolded onto *p*-t-butylcalix[4]-arene, synth, 5469

proline analogues, solid-phase synth *via* a three component 1,3-dipolar cycloaddition, 3671

L-prolyl-L-*m*-[bis(chloroethyl)amino]phenylalanyl-L-norvaline ethyl ester hydrochloride, anti-tumour tripeptide ester, synth from L-*m*-sarcolysin, 563

protected α-amino acids, synth by reaction of copper 'catalysed' Grignard reagents with (*S*)-*N*-t-butoxycarbonylaziridine-2-carboxylate derivs, 3761

protection/activation of amino and thiol acids with simultaneous *N*-protection and pentafluorophenyl ester protection/activation, 4915

(*S*)-β-pyrazolylalanine and (*S*)-quisqualic acid, synth by ring opening of aserine-derived aziridine by pyrazole and 1,2,4-oxadiazolidine-3,5-dione, 5225

racemization studies of Fmoc-Cys(Trt)-OH during stepwise Fmoc-solid phase peptide synth, 1187

stereoselective synth of α– by Gabriel reaction, use of 2-oxoimidazolidine-4-carboxylate as chiral auxiliary, 4957

sterically hindered –, *N*-t-Boc protection using t-Boc_2O/Me_4NOH in MeCN, 3441

N-substituted –, synth using 3-amino-perhydropyrrolo[2,1-*c*][1,4]oxazin-4-ones as chiral synthon, 3175

substituted α-dehydrophenylalanine, irradiation of, synth of isoquinoline and 1-azetine derivs *via* photoacetyl migration, 5917

2-substituted *N*-(benzylidene)glycinonitriles, direct vinylation of, synth of α-vinyl substituted nitriles, 8909

3-substituted pipecolic acid methyl esters, synth from 3-hydroxy-2-pyridine carboxylic acid, 459, corrig. 2315

subtilisin-CLEC for synth of alkylamides of aminoacids and peptides, 5317

sulfones and sulfoxides derived from methionine and homocysteine thiolactone, conversion into amino ketones, an amino cyclopentenone and amino alcohols, 7457

β-sulfonopeptides bearing a taurine in place of a penultimate amino acid unit, synth as inhibitors of D-alanyl-D-alanine transpeptidases, 4663

N-sulfonyl α-aminohydroxamic acids, synth on solid support, 8045

syn-α-halo-β-aminothioesters, synth by reaction of boron enolates, derived from t-butyl α-halothioacetate and bearing menthone-derived chiral ligands, with imines, subsequent conversion to aziridines, 3747
synth of α-acetylamino-α-alkynylmalonic esters in approach to enzyme inhibitors, 861
synth of α-methyl –, anodic methoxylation of proline and pipecolic acid esters, phenylthio-demethoxylation, stereospecific α- (to ester) methylation, and removal of PhS group, 8395
synth of (2*R*)-*N*-benzylalanine deriv by dynamic kinetic resolution, 1301
t-Boc-proline methyl ester, anodic methoxylation using simple 12-v battery supply, 8317
α-tertiary amino acids obtained from D,L-pipecolic acid, decarbonylation of, application to synth of polyhydroxylated indolizidines, 5581
transformation of Trp^9 and Trp^{11} located at the hydrophobic core of *O*-acetyl gramicidin A, to Asp gramicidin and Asp^9Asp^{11} gramicidin, 5199
α-trifluoromethyl substituted α-amino acids, synth *via* Stevens rearrangement of ammonium ylids formed on reaction of methyl 3,3,3-trifluoro-2-diazopropionate with amines and amides, 615
α-trifluoromethyl-*allo*-threonine derivs by Pummerer reactions of *N*-Cbz α-amino-α-trifluoromethyl-β-*p*-tolylsulfinyl methyl butanoates resulting in displacement of sulfinyl by hydroxy group, 6005
3-(triphenylsilyl)glycidol, starting material for synth of an A ring precursor to 1α-hydroxyvitamin D, 5589
tryptophan, cycloaddition with a tethered 1,2,4-triazine, 5061
tryptophan, *N*-cyclohexyloxycarbonyl group an indole-N protection, 7529
tryptophan linked to the Kaiser oxime resin, Pictet-Spengler reaction with aldehydes, synth of 1,2,3,4-tetrahydro-β-carboline derivs, 3963
uracil polyoxin C, uridine with 5'-C as glycine residue, synth, 163
N-urethane anthranilamides, starting material for solid phase synth of chiral 3-substituted quinazoline-2,4-diones, 7031
(3*R*)-[4,4,4-D_3]-L-valine, [^{15}N]-L-isoleucine and [^{15}N]-*allo*-isoleucine, synth from homochiral 2-alkylated carboxylic acids, 1517
vigabatrin (4-amino-5-hexenoic acid), inhibitor of GABA-T (GABA transaminase), synth from butadiene monoepoxide, 9161
vinylglycine and allylglycine, hydroboration of with dicyclohexyl- or diisopinocampheylborane as a route to boron-derivatives of α-amino acids, 5111

Amino alcohols

acyclic 1,3-diamino-2-alcohols by condensations of *N,N*-dibenzyl α-amino aldehydes with nitroalkanes mediated by tetrabutylammonium fluoride, 987
allosamizoline, amino-cyclitol derivative of chitinase inhibitor allosamidin, mechanism of cyclopentane ring formation, 5711
amino alcohol library, construction by parallel synth based on Mannich-type three-component reactions of aldehydes, amines and polymer-supported silyl enol ethers followed by cleavage from the supports, 7783
α-amino alcohols and ketones from the reaction of *N*-(9-phenylfluoren-9-yl)-alanine oxazolidinone with organolithium reagents, 3403
6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl group, synth from *N*-Boc bis-aziridine, 7717
β-aminoalcohols and carbonyl compds, condensation of, synth of hydroxy-enamines which can be oxidised to polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, 9203
2-amino-1-cyclohexyl-6-methylheptane-3,4-diol, diastereoselective synth from L-phenylalanine, 1961
aryl *cis* aminoalcohols, regio and stereocontrolled synth from *cis* glycols, 2529
β-aryl-β-aminoalcohols, synth from *N*-diphenylmethylene benzylamines, 945
(2*S*,3*R*,4*S*)-2-(benzylamino)-1-cyclohexyl-6-methylheptane-3,4-diol, asymmetric synth, 4525
1,2–, conversion into morpholine-2,3-diones *via* DMAD adducts, 4217
enantiopure aminoalcohols, synth from corresponding diols by activation of the diols as cyclic carbonates, azide opening of the carbonates and hydrogenation of the resulting azidoalcohols, 3219
enzymatic resolution of amines and – using pent-4-enoyl derivs, 6287
from sulfoxides derived from methionine and homocysteine thiolactone by Raney nickel desulfurisation, 7457
glycopeptides containing *O*-α-fucosyl-(1*R*,2*R*)-2-aminocyclohexanol, design and synth as sialyl Lewis X mimetics, 5427
N-hydroxy-α-amino phosphonate derivs, potential

haptens, synth by Mitsunobu reaction with *N*-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine and α-hydroxyphosphonates, 6331
optically active silylaminoalcohols, synth from the corresponding chiral diols, 555
(*R*)-(−)-phenylglycinol, condensation of ketoacids with −, synth of amide which could be cyclised to isoquinolinium salt and further reduced to an oxazolidine, 4369
synth by isomerisation of amino alkoxy oxiranes by treatment with butyllithium/diisopropylamine/potassium t-butoxide mixture, 5209
synth from *O*-t-butyl-*N*-(chloromethyl)-*N*-methyl carbamate by reaction with lithium powder as a key step, 5597

Amino aldehydes
α,α-disubstituted α-aminoaldehydes and α-amino acids, synth using [3,3] allylic trichloracetimidate rearrangement, 2573

t-Amino effect
in Vilsmeier formylation of *N*-(4-tolyl)pyrrolidine, -piperidine and -perhydroazepine, 2679

Amino ketones
β-amino ketone or ester derivs by Mannich-type reaction of *N*-(α-aminoalkyl)benzotriazoles with silyl enolates, 3731
α-amino ketones and alcohols from the reaction of *N*-(9-phenylfluoren-9-yl)-alanine oxazolidinone with organolithium reagents, 3403
β-amino ketones by three-component reactions of aldehydes, amines and silylated nucleophiles, 9221
γ-amino-αβ-unsaturated ketones, synth by Pd-catalyzed rearrangement of α-benzoyl allyl sulfoximines, 5417
from sulfones and sulfoxides derived from methionine and homocysteine thiolactone by cyclisation and Raney nickel desulfurisation, 7457
synth on polymer support by reaction of bound silyl enol ethers with imines, 2809

Amino nitriles
α-amino nitriles by three-component reactions of aldehydes, amines and silylated nucleophiles, 9221
5-aminodibenzo[*a*,*e*]cycloheptene-5-carbonitrile, intramolecular amino-bromination, 8655

Amino sugars
N-acetyl-D-glucosamine-derived *C*-β-D-glycosyl synthons - formaldehyde, nitroethane, nitroethene, 2341
9-*O*-acetylneuraminic acid and 9-*O*-acetyl-GD3, melanoma antigen, synth by enzymic acetyl transfer, 9271
6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl group, synth from *N*-Boc bis-aziridine, 7717
asparagine-linked glycoproteins, synth of core trisaccharide, 8795
aza sugars, isomerization of polyhydroxy pyrrolidines, piperidines, and azepanes, 1609, 1613
aza-C-disaccharide synth using 7-oxabicyclo-[2.2.1]heptene strategy, 2023
aza-*C*-glycosides, a disaccharide analogue with piperidine ring based on 2,6-iminoheptitol structure, 1991
azapurpurosamine C synth using enzymic asymmetrization of 3,6-di(hydroxymethyl)hexahydropyridazine derivs, 7951
4,5-dihydroxyperhydronicotinic acid, branched imino-sugar, synth and enzyme-inhibitor activity, 2707
elsaminose, 2-amino-2,6-dideoxy-3-*O*-methyl-D-galactose, synth from aminoacid building blocks, 5743
glucosamine, biosynthetic conversion into allosamizoline, amino-cyclitol derivative of chitinase inhibitor allosamidin, 5711

Ammonium salts
(2-acetyldecyl)-trimethylammonium iodide, a base-labile surfactant, synth from corresponding ketone involving Mannich reaction followed by quaternisation, 9135
ammonium aryl *H*-phosphonates, use in conversion of 5'-*O*-(dimethoxytrityl)-2'-deoxynucleoside derivs into 3'-*H*-phosphonates, 8621
inhibition of lanosterol synthase by a tetracyclic ammonium ion, a structural analogue of the protosterol cation, indicates that the cation is not strongly bound by the enzyme, 3287
spirocyclic ammonium ylid intermediates in prep of azacyclooctene and azacyclononene containing substrates, 2165
tetrabutylammonium fluoride as reagent for removal of *N*-benzhydryl-glycolamide ester protecting groups, 5191

Analgesics
bupivacaine (levobupivacaine), drug used as local anaesthetic, synth of enantiomerically pure (*S*)-bupivacaine from (*S*)-lysine, 6399
epibatidine, an antinociceptive alkaloid originally isolated from *Epipedobates tricolor* poison frog, synth from a tropinone, 1463
(-)-epibatidine, frog alkaloid, chiral synth, 7485

Anhydrides
glutaric –, selective chlorination at C-3 using $SO_2Cl_2/(PhCO)_2O_2$, 7245
maleic anhydride moiety of cornexistin, conversion into diesters using trimethylsilyldiazomethane, 1967
purine nucleoside acyldiphosphates and acyltriphosphates, synth, 8739
see Carboxylic anhydrides
Annulation
of (3-alkoxycarbonyl-oxo-propylidene)triphenylphosphorane with 1,2-diacylethylenes, synth of cyclopentenones, 401
cis- and *trans*-annulated lactones by palladium-(II)-catalysed carbonylation of organomercurials in the presence of *p*-benzoquinone, 1125
[3+2] annulation by sequential nucleophilic and electrophilic alkylations of 1,3-dicarbonyl compds with a trimethylenemethane zwitterion equivalent, 471
3+4 annulation method for synth of polycyclic systems in a two step sequence consisting of asymmetric intramolecular cyclopropanation followed by a Cope rearrangement, 3967
of heterocyclic rings onto a 2-alkyl quinone monoketal intermediate, potential for alkaloid synth, 2881
Lewis acid promoted spiroannulation *versus* [2+2]-cycloaddition of dihydrofuran and dihydropyran to quinones, 5221
5- and 6-membered ring annulation by palladium catalysed coupling of functionalised aryl bromides with allylic alcohols and homoallylic alcohols respectively, 619
methylenecyclopentane – *via* [3+2] cycloaddition reaction of 1-(alkylthio)-2-(trimethylsilylmethyl)allyl esters, 5943
palladium carboannulation process for synth of substituted pyrrolo[2,3-*b*]pyridin-3-ones from 2-amino-3-iodo-pyridine derivs, 43
photo– of keto-acetals by Norrish type II reaction, synth of systems related to zaragozic acid, 4883
photo-assisted – in synth of 1,3-dihydro-2*H*-imidazo[4,5-*b*]quinolin-2-ones, 1937
Annulenes
bis-complexed large ring benzannulene by ligand exchange reaction between (tricarbonylchromium)naphthalene and a dibenzannulene, 6665
14c,14d-dihydro-14c,14d-dimethyldibenzo[*e,l*]-pyrene, synth and reversible photo-isomerisation to a tetrabenzo[*ab,d,fg,i*][10]annulene, 5239
5,10-dimethyl[13]annulenone, monocyclic annulenone larger than tropone, synth by catalytic partial hydrogenation of 5,10-dimethylbisdehydro[13]annulenone, 2601
Ansa compds
[8]-*m*-carboranophane, [8], [9] and [10]dithia-*m*-carboranophane and [8,8], [9,9] and [10,10]-tetrathiadicarboranophanes, synth and structure, 7221
dipyridinium symmetrically 1-3' bridged with oct-5-ene chains, synth in biomimetic approach to manzamine, 6919
tetraphenylporphyrin singly and doubly strapped with tripyrrane units, synth, spectra, complexation, 6469
Anthelmintics
marcfortine A, oxidation α- to tertiary N, prep of functionalized derivs, 6053
milbemycin β3, synth of C1-C14 fragment using Suzuki coupling promoted by Tl_2CO_3, 2507
milbemycin SB-201561, 6-step synth involving Beckmann-type oxime fragmentation followed by reassembly of the spiroketal moiety, 4811
Anthocyanidins/anthocyanins
procyanidin A2 dimer, structure and conformation, 2015
Anthracenes
anthracene fluorophore, covalent grafting onto the surface of silica starting from aminopropyl silicagel, 7039
2-anthrylmethoxyacetic acid, chiral anisotropic reagent for elucidating configuration of alcohols by NMR, 4541
cis-1,5-dipropyl-1,2,3,4,5,6,7,8-octahydroanthracene-1,5-diamine, derived bis-phenylureas, synth and association constants with dicarboxylate salts, 2795
Anthracyclins/anthracyclinones
angucyclinones, approach to ring-A aromatic examples by free radical annulations, 7615
2-(1-hydroxyalkyl)-4-(phenylsulfinyl)-1-naphthols, protection of both OH groups by dimethylsilylenedioxy ether formation before acetoxydesulfinylation under Pummerer-type conditions, 7545
Anthraquinones
1,2-diamino anthraquinone, condensation with 1,10-phenanthroline-5,6-dione, synth of 10,11-[1,4-naphthalendione]dipyrido[3,2-*a*;2',3'-*c*]-phenazine, 5437
Antibacterials
bicyclic pyrazolidinones with potential as –, 4891

(+)-cordiaquinone B, merosesquiterpenoid quinone with antibacterial activity from root of *Cordia corymbosa*, synth from (4*S*,5*S*)-4-methyl-5-trimethylsilyl-2-cyclohexen-1-one, 7075
γ-lactams related to penicillins and cephalosporins, synth from thiazine, 5601
levofloxacin, quinolone –, synth of (*S*)-7,8-difluoro-3-methyl-2*H*-1,4-benzoxazine, key intermediate, 9317
manzamine A, polycyclic alkaloid with cytotoxic, antileukemic and antibacterial activities, construction of the tricyclic ABC ring subunit, 7365
(+)-ptilocaulin, antibacterial and cytotoxic compd from the Caribbean sponge *Ptilocaulis aff. P.spiculifer*, synth involving photoreductive cyclopropane ring opening of a bicyclo[4.1.0]-heptanone deriv, 5091
quinolones antibacterial agents, solid phase approach to using the DIVERSOMER® technology, 4815
tricyclic analogues of quinolone –, synth involving Reformatsky-type reaction between bromomalonate and a thiopyrrolidone, 9403

Antibiotics

A83586C, azinothricin –, construction of the northern line, 4233
alisamycin, a manumycin - amino–epoxycyclohexenone with polyene side chains, synth, 6619
3-alkenyl-Δ^2-cephems, synth by copper(I) chloride-promoted alkenylation of 3-trifluoromethylsulfonyloxy-Δ^3-cephem with alkenyltributyltin, 5967
2-alkenylcarbapenems, synth *via* the Heck reaction of carbapenem-2-yl triflate with mono-substituted alkenes, 2987
2-alkyl substituted carbapenems, synth *via* palladium-catalysed cross-coupling reaction of alkylboranes with carbapenem-2-yl triflates, 2589
almazole D, antibacterial 2,5-disubstituted oxazolic dipeptide from a delesseriacean seaweed of Senegal, structure, 3049
α-amino-β-lactams, microwave-assisted synth using the tetrachlorophthalimido group as a masked amino substituent, 6989
angelmicin B, reduced naphthacenylnaphthacenequinone glycoside, structure from NMR, 2785
azinomycins, antitumour antibiotics from *Streptomyces griseofuscus*, synth of dehydroamino acids related to by mono-osmylation of dehydroamino acid dimers, 447
bafilomycin A_1, antibiotic inhibitor of vacuolar H^+-ATPase, synth of C5-C11, C12-C17 and C18-C25 segments and total synth by convergent route, 1069, 1073
bafilomycins, fragmentation of the 2,4-dihydroxytetrahydropyran portion under Mitsunobu conditions, 9001
bicyclo[7.3.0]dodecadiyne core moiety of the C-1027 chromophore, synth through cyclisation of alkynyl aldehyde, 5135
bicyclomycin, biosynthesis, incorporation of leucine and isoleucine, hydroxylation and bridge formation mechanisms, 6935, corrig. 7329
bredinin, imidazole nucleoside –, synth of 2'-deoxy and 5'-phosphate derivs, 187
bryostatins, synth of the C1-C9 segment of bryostatin by kinetic resolution of racemic β-keto esters, 1767
carbapenems, synth of protected 2-thia-5-azabicyclo[2.2.1]heptan-3-ones as intermediates to carbapenem side chains, 2919
(2*S*,3*R*)- and (2*R*,3*R*)-*m*-chloro-3-hydroxytyrosines, vancomycin amino acids, synth, 7967
ciprofloxacin and norfloxacin, quinolone antibiotics, synth by reaction of 7-chloro-1-cyclopropyl-6-fluoro-4-oxo-1,2-dihydroquinoline-3-carboxylic acid with piperazine, 6785
clarithromycin A, oxidation of NMe_2 group using metalloporphyrins and hypochlorite; *N*-oxide, demethylation and deamination products, 787
(–)-codonopsine, antibiotic alkaloid isolated from *Codonopsis clematidea*, synth employing reduction of α-hydroxypyrrolidine, 5531
curacin A, antimitotic antiproliferative antibiotic from marine cyanobacterium *Lyngbya majuscula*, synth of C1-C7, C8-C17 and C18-C22 segments and total synth of curacin A by condensation of the segments, 1795, 1799
cyclic depsipeptides Sch 57 697 and aureobasidin A, antifungal –, synth, 5661
depsipeptide – A3586C, asymmetric synth of entire backbone, 9345
(±)-dienomycin C and (±)-4-*epi*-dienomycin C, alkaloids from *Streptomyces* with antibiotic activity, synth by elaboration of 2,3,4-substituted piperidines using diene iron tricarbonyl complexes, 3991
(-)-4a,5-dihydrostreptazolin, *N*-carboxy-7-hydroxyperhydro-1-pyrindine lactone deriv, synth by Pd-catalyzed reductive enyne cyclization, 8787
(+)-diolmycin A2, an anticoccidial agent from fermentation broth of *Streptomyces* sp. WK-2955, synth by ytterbium(III) trifluoro-

methanesulfonate catalysed reaction of epoxides with indole, 3727
distamycin, tripeptide antibiotic originally isolated from *Streptomyces distallicus*, synth and DNA binding properties of nitro analogues of, 7801
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
estramycins, anticancer antibiotics, synth of an estradiol derived enyne starting from estrone, 3395
fenanthroviridone, gilvocarcin BE-12406X_2 and antibiotic WS 5995B, benzo[*b*]phenanthridines from *Streptomyces*, synth based on coupling of organostannanes with bromoquinones, 8953
(+)-FR 900 482, antitumor − with hydroxylamine hemiacetal function, synth of natural enantiomer, 3471, 3475, 3479
FR-66979, synth of pentacyclic core structure, 5243
fredericamycin A, antitumour antibiotic from *Streptomyces griseus*, synth of spiro[cyclopentane-1,1'-indan]-2,5-dione system, valuable in asymmetric synth of −, 1817
fredericamycin A, quinone antitumour antibiotic from *Streptomyces griseus*, synth of BCD and BCDE ring systems of by acylation of the organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, 1367
glycopeptide antibiotics, synthetic studies towards, synth of 16-membered cyclic tripeptide (DOEG ring) system of teicoplanin, 3023
(*E*)- and (*Z*)-hex-3-ene-1,5-diynes, antitumour antibiotics, synth by a modified Ramberg-Bäcklund reaction of dipropargylic sulfones, 1049
5-hydroxy-4-oxo-norvaline antibiotic, synth of α-ketol amino acid precursors related to − by osmium trichloride-catalysed oxidation of olefins with peracetic acid, 3333
δ-hydroxyl-α-amino lactones, precursor to clavam antibiotics, synth from chiral α-furfuryl amide by Sharpless asymmetric dihydroxylation, 6371
hygrolidin, 16-membered tetraene macrolide − from *Streptomyces* sp., synth, 9073, 9077
(±)-indolmycin, oxazolin-5-ylethylindole deriv, synth, 6447
kinamycin antibiotics, synth of the kinafluorenone scaffold by annulation of indenone with phthalide sulfone, 2641
β-lactams by radical cyclisation of *N*-ethenyl trichloroacetamides, γ-lactams are formed when exposed to nickel powder and acetic acid in 2-propanol, 1397
γ-lactams related to penicillins and cephalosporins, synth from thiazine, 5601
loloatin B, marine cyclic decapeptide −, structure, 7201
manumycins, synth of analogues and of (±)-LL-C10037α, 2101
marcfortine A, oxidation α- to tertiary N, prep of functionalized derivs, 6053
1β-methylcarbapenems, synth based on cationic cyclisation of the acyliminium ion with a ketene dithioacetal terminator, 7811
(±)-methylenolactocin, antitumour antibiotic from *Penicillium* sp., synth, 4809
miharamycin B, nucleoside antibiotics produced by *Streptomyces miharaensis*, synth of the northern part from methyl 2,3,4-tri-*O*-benzyl-α-D-gluco-hexodialdo-1,5-pyranoside, 4003
milbemycin SB-201561, 6-step synth involving Beckmann-type oxime fragmentation followed by reassembly of the spiroketal moiety, 4811
(±)-mitomycin K, synth, oxidation of mitosene indole double bond by MoO_5.HMPA, 6049
mitomycin skeleton, synth by intramolecular 1,3-dipolar cycloaddition approach to 4-keto-4,5,6,7-tetrahydroindoles, 2887
moenomycin A, reaction with *o*-nitrobenzenediazonium chloride, synth of a compd with antibiotic and enzyme inhibitory activity, 5087
moenomycins, antibiotics that inhibit the transglycosylation step of peptidoglycan biosynth, use of two new C_9 protecting groups in synth of analogues of, 367
orienticin C, glycopeptide antibiotic, synth of the M(2-4) macrocyclic subunit from a tetrapeptide presursor by intramolecular nucleophilic aromatic substitution, 3251
pamamycin-607, synth of a C1'-C11' synthon of starting from ethyl (2*S*)-2-hydroxypentanoate in ten steps, 3747
penems, carbapenems and related β-lactam antibiotics, synth of acetoxyazetidinone, a key intermediate to, from *N*-acryloyl-1,3-benzoxazinone, 5565
phenazostatins A and B, phenazine antibiotics with neuronal cell protecting activity from culture broth of *Streptomyces* sp.833, structures, 8529
plakinic acids, marine metabolites containing the 1,2-dioxolane group, synth from alkan-2-ones involving condensation, isomerisation and per-

oxymercuration, 1885
pristinamycin I_A, cyclic depsipeptide, electrochemical reduction, effect of macrocycle ring-opening, 7499
(*S,S*)-3-prolylazetidin-2-one, key component in synth of HIV gp120 constrained immunogen, synth from D-serine, 965
pyoluteorin, assembly of triketide skeleton by isomerisation of enol esters derived from cyclic 1,3-diketones catalysed by cyanide, 1007
pyrrolo[2,1-*c*][1,4]benzodiazepine antibiotics, synth by reductive cyclisation of the azide employing hexamethyldisilathiane, 6803
pyrrolo[2,1-*c*[1,4]benzodiazepines, synth of imine form of, synth of antibiotic DC-81 and its thio analogue, 2281
reveromycin A, polyketide-type antibiotic produced by *Streptomyces* sp., synth of the 6,6-spiroketal system of and absolute configuration at C_{11},C_{12},C_{15}, C_{18} and C_{19}, 6755
sanfetrinem, convenient synthesis of methoxyketone precursor to tribactam (trinem), 3891
Sch 68631, phenanthraquinone antiviral from *Streptomyces* sp., hepatitis C proteinase inhibitor, 7229
(±)-strobilurin E, spirocyclic benzodioxan –, synth, 7955
study of mechanism of activation of C(7)ethylenediamine substituted mitomycins, 2337
tetronasin, biosynthesis, synth and incorporation of di-, tri-, and tetra–ketide precursors, 3511, 3515, 3519
thienamycin and imipenem, β-lactam antibiotics, synth of a key intermediate by stereoselective two-direction elongation of asymmetrised bis-(hydroxymethyl)acetaldehyde, 521
tricyclic β-lactam antibiotic GV 104326, synth of a key intermediate by reaction of zinc enolate derived from chiral non-racemic 2-methoxycyclohexanone with azetidinone, 7441
vancomycin analogs SAV-1 and -2, interaction with resistant cell wall model, 191
vancomycin, synth of partial model structure containing Cl atom by $Tl(NO_3)_3$ oxidation to form diphenyl ether link, 8791
wortmannin, PI 3-kinase inhibitor, synth from dihydrocortisone, 6141
YM-47522, antifungal antibiotic, absolute stereochemistry of, 6711
see also Anthracyclins/anthracyclinones, Cephams and cephems, Penicillins

Antibodies
catalytic –, detection of activity at trace levels using vector hybridization of tentagel-supported peptide-oligonucleotide, 175
N-hydroxy-α-amino phosphonate derivs, possible haptens for eliciting catalytic antibodies, synth by Mitsunobu reaction of *N*-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine and α-hydroxyphosphonates, 6331

Anticancer agents
9-*O*-acetylneuraminic acid and 9-*O*-acetyl-GD3, melanoma antigen, synth by enzymic acetyl transfer, 9271
azetidine-type taxanes, synth from 2'-deacetoxyaustrospicatine, 3203
bacteriochlorin derivs for photodynamic therapy, synth from bacteriochlorophyll-a, UV, 6431
C-1027 chromophore, absolute configuration by Mosher's method applied to cyclized product, nOe effects in apoprotein-bound compd, 4997
carboranyl spermidines and spermines, synth as potential BNCT agents, 9283
cephalotaxidene, dimeric alkaloid with potential antileukemic activity from *Cephalotaxus harringtonia* var. *drupacea*, structure, 7053
chiral *meso*-aminoporphyrin derivs, fluorescence in cells for use in PDT, 7511
cholestane glycosides from *Ornithogalum saundersiae*, cytostatic activity, 1245
conagenin, immunomodulator, synth of two diastereomers, 2499
epothilon A and B, cytotoxic macrolides from *Sorangium-cellulosum* culture So ce901, synth of the C1-C9 segment from methyl 3-hydroxy-(2*S*)-methylpropionate, 9179
(+)-FR 900 482, antitumor antibiotic with hydroxylamine hemiacetal function, synth of natural enantiomer, 3471, 3475, 3479
harveynone and *epi*-harveynone, synth involving Sonogashira coupling of highly oxygenated vinyl halides, 7445
kedarcidin and C-1027 chromophores, synth of 10-membered masked oxaenediyne analogue, 2433
7-mesylpaclitaxel, unprecedented side-chain conformation by X-ray, 3425
paclitaxel analogues, synth using azetidinones, 6495
study of mechanism of activation of C(7)ethylenediamine substituted mitomycins, 2337
synth of manumycin analogues and of (±)-LL-C10037α, 2101

taxanes: synth of taxol A-ring components by diastereoselective additions of alkenyl lithiums to aldehydes, 9139
taxanes, 10-deacetyl-10-dehydrobaccatin III-type taxanes, reaction with hydrazine to yield the 7,9-pyrazoline adducts which retained their anticancer activity, 7837
taxanes, oxidative functionalisation of positions 1, 2, 9 and 10 of 5-*O*-cinnamoyltaxicine I, 9189
taxanes, tricyclic ring system of the taxane diterpenes, synth *via* an A→ABC intramolecular Diels-Alder construction and subsequent elaboration to a taxinine analogue, 8069
trichothecinols A-C, anti-tumour promoting sesquiterpenoids from the fungus *Trichothecium roseum*, structure and inhibitory activity against Epstein-Barr virus early antigen activation, 9219
see also Antitumour compds

Antifeedants
tridentatols A-C, phenolic metabolites from marine hydroid *Tridentata marginata*, structures and antifeedant activity, 9131
Ypaoamide, broadly acting feeding deterrent from the marine cyanobacterium *Lyngbya majuscula*, structure, 6263

Antifungals
cepaciamide A, fungitoxic compd from *Pseudomonas cepacia* D-202, structure, 1039
chiral synth of 2,2,4-trisubstituted tetrahydrofurans *via* titanium imide enolates, synth of Schering – agents, 5657, corrig. 6821
cyclic depsipeptides Sch 57 697 and aureobasidin A, synth, 5661
(±)-ledol, an aromadendrane sesquiterpene with antifungal activity, total synth using type two intramolecular Diels-Alder reaction coupled with bridged to fused ring interchange, 949
plakinic acids, marine metabolites containing the 1,2-dioxolane group, synth from alkan-2-ones involving condensation, isomerisation and peroxymercuration, 1885
R106-1 (LY295337), antifungal agent produced by *Aureobasidium pullulans* R106, trimethylamine *N*-oxide promoted retro-aldol reaction of, generation of R106-sarcosine, 4301
(+)-restricticin, antifungal by enzyme inhibition, synth in 12 steps from protected (*S*)-methyl 2-methyl-3-hydroxypropionate, 8243
Sch 42427 and ER-30346, azole antifungals, synth of 2',4'-difluoro-(*R*)-2-hydroxypropiophenone as a key intermediate to, 8117
Sch 42427/SM 9164, chiral azole antifungals, preparative chromatographic resolution and total asymmetric synth *via* enzymatic prep of chiral α-hydroxy arylketone intermediates, 611
tautomycetin, antifungal compd from *Streptomyces griseochromogenes*, synth of degradation product of, determination of stereochemistry of tautomycetin, 491
terbinafine, antifungal agent selectively inhibiting fungal squalene epoxidase, synth from amino vinyl chlorides and alkynes, 57
YM-47522, antifungal antibiotic, absolute stereochemistry of, 6711

Antigens
9-*O*-acetylneuraminic acid and 9-*O*-acetyl-GD3, melanoma antigen, synth by enzymic acetyl transfer, 9271
glycopeptide analogue of the immunodominant T cell epitope on type II collagen, solid phase synth, use of acid labile protective groups for carbohydrate moieties in solid phase synth of glycopeptides, 3011
phosphorylcholine affinity columns, convenient reduction using ammonium formate/Pd-C, 7821
Thomsen-Freidenreich family of –, 4,6-benzylidene protected *N*-acetylated galactosamine β-glycosylated at the 3-position with peracetylated galactose as donor for, 595
two blood group antigens, H-type 2 and Lewis X trisaccahrides containing 5-thio-L-fucose instead of L-fucose, synth from 1,6-anhydro-2-azido-2-deoxy-lactose, 1809
water-soluble glycopolymers containing GM_3 saccharide, 3421

Antiinflammatory compds
C-fucopeptides, selectin antagonists, synth of lipid-attached molecules to enhance activity, 9033
C-mannose derivatives, sialyl Lewis X mimics, synth, 9037
palauolol, anti-inflammatory sesterterpene from the sponge *Fascaplysinopsis* sp., structure and absolute stereochemistry, 3951
pseudopterosins, radical cyclisation of η^6-arene-$Cr(CO)_3$ complexes, synth of precursors for synth of–, 2947

Antimalarial agents
see Antiprotozoals

Antiprotozoals
antimalarial endoperoxides, 1,4-di(*p*-fluorophenyl)-2,3-dioxabicyclo[2.2.2]-octane and -oct-5-ene, synth, activity, 7225
apicidin, cyclic tetrapeptide isolated from

Fusarium pallidoroseum, antimalarial and antiparasitic activity, 8077
1,4-endoperoxides of seven-membered rings by photochemical oxygenation of 1,5-dimethylene compds, antimalarial activity, 815

Antithrombotic agents
isoxazoline deriv DMP 754, non-peptide platelet GP IIb/IIIa antagonist, chiral synth, 4455

Antitumour compds
acanthostral, an antineoplastic *cis,cis,cis*-germacranolide from *Acanthospermum australe*, structure, 1455
N-(α-aminoacyl) derivatives of melphalan, *p*-[di-(2-chloroethyl)amino]phenylalanine, for tumour targeting, 7581
4β-anilino-4'-demethylepipodophyllotoxins, synth by employing $Bu_4N^+I^-$ in the displacement of the 4-bromoepipodophyllotoxin, 3359
batzelline C, isobatzelline C, discorhabdin C and makaluvamine D, cytotoxic against human colon tumour cell line HCT 116, synth from 6,7-dimethoxy-4-methyl-5-nitroquinoline, 1509
(+)-conagenin, immunomodulator and enhancer of antitumour activity produced by *Streptomyces roseosporus*, synth involving aldol reaction of propiophenone with acetaldehyde followed by reduction, 4047, corrig. 4287
cotelomers derived from *N*-[tris(hydroxymethyl)-methylacrylamide] and *N*-(acryloylaminoalkanoyl)cytosine arabinoside, cytotoxic effects as carriers, 9049
curacin A, antimitotic antiproliferative antibiotic from marine cyanobacterium *Lyngbya majuscula*, synth of C1-C7, C8-C17 and C18-C22 segments and total synth of curacin A by condensation of the segments, 1795, 1799
cytotoxic enediyne estrogen conjugates, synth involving Mitsunobu coupling of the desired phenol with alcohol, 3643
(8*R*,9*S*,10*S*)-9-deoxy-8,9-epoxy-10-hydroxydaunorubicin, antitumour compd, synth from daunorubicin, 1123
depsipeptide antibiotic A3586C, asymmetric synth of entire backbone, 9345
ellipticine, antitumour compd, synth from 2-(3-bromoisonicotinoyl)indole-3-carboxylic acid, 7753
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
epothilon A and B, cytotoxic macrolides from *Sorangium-cellulosum* culture So ce901, synth of the C1-C9 segment from methyl 3-hydroxy-(2*S*)-methylpropionate, 9179
estramycins, anticancer antibiotics, synth of an estradiol derived enyne starting from estrone, 3395
fredericamycin A, antitumour antibiotic from *Streptomyces griseus*, synth of spiro[cyclopentane-1,1'-indan]-2,5-dione system, valuable in asymmetric synth of −, 1817
fredericamycin A, quinone antitumour antibiotic from *Streptomyces griseus*, synth of BCD and BCDE ring systems of by acylation of the organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, 1367
harveynone and *epi*-harveynone, synth involving Sonogashira coupling of highly oxygenated vinyl halides, 7445
(*E*)- and (*Z*)-hex-3-ene-1,5-diynes by a modified Ramberg-Bäcklund reaction of dipropargylic sulfones, 1049
incrustasterol A and B, cytotoxic polyoxygenated steroids from marine sponge *Dysidea incrustans*, synth, 4775
isodehydrothyrsiferol and 10-epidehydrothyrsiferol, polyether squalene derivs from red alga *Laurencia viridis*, structures, 2671
lagunapyrones A-C, cytotoxic activity against human colon cancer cell line HCT-116, isolation from unidentified marine sediment bacterium, structures, 1327
manzamine A, polycyclic alkaloid with cytotoxic, antileukemic and antibacterial activities, construction of the tricyclic ABC ring subunit, 7365
(±)-methylenolactocin, antitumour antibiotic from *Penicillium* sp., synth, 4809
neocarzinostatin chromophore, synth of naphthoic acid component of from 4-bromo-3-methylanisole by photocyclisation reaction, 587
(+)-octalactin A, cytotoxic lactone natural product, synth of two key intermediates to, 5049
pancratistatin, *Amaryllidaceae* alkaloid exhibiting antitumour activity, synth of aminocyclitol fragment of from 7-oxanorbornenic disulfone, 105
pancratistatin, synth of a diol from *myo*-inositol as an intermediate for synth of 7-deoxypancratistatin, 13
pectinoacetal-related sterols with cancer cell antiproliferative properties, isolation from gorgonian *Ctenocella* sp., structure, 2959
plakinic acids, marine metabolites containing the 1,2-dioxolane group, synth from alkan-2-ones

involving condensation, isomerisation and peroxymercuration, 1885
L-prolyl-L-*m*-[bis(chloroethyl)amino]phenylalanyl-L-norvaline ethyl ester hydrochloride, antitumour tripeptide ester, synth from L-*m*-sarcolysin, 563
pyrrolo[2,1-*c*][1,4]benzodiazepines, synth of imine form of, synth of antibiotic DC-81 and its thio analogue, 2281
rabdoumbrosanin, its 16,17-dihydro and 8,14-epoxy derivatives, 8,9-secokaurane diterpenes, 9387
rhizoxin, 16-membered macrolide from *Rhizopus chinesis*, construction of the C_{10}-C_{26} fragment using substrate directed allylstannane additions to aldehydes, 3291
RPR 121056A, major metabolite of irinotecan (CPT-11) which is a deriv of camptothecine, semisynth of starting from SN-38 (7-ethyl-10-hydroxycamptothecine), 6327
suberosenone, cytotoxic sesquiterpene from gorgonian *Subergorgia suberosa*, structure and cytotoxic activity, 3259
taxanes: synth of taxol A-ring components by diastereoselective additions of alkenyl lithiums to aldehydes, 9139
taxanes, construction of the B-ring of taxanes by diastereoselective triple radical cyclisation of a bromomethyldimethylsilyl allyl ether, 6295
taxanes, 10-deacetyl-10-dehydrobaccatin III-type taxanes, reaction with hydrazine to yield the 7,9-pyrazoline adducts which retained their anticancer activity, 7837
taxanes, highly functionalised AB taxane ring system, synth using 1,4-dioxene, 7013
taxanes, introduction of C-1 to C-5 functionality into the taxane ABC ring system by isomerisation, autoxidation and epimerisation, 6639
taxanes, oxidative functionalisation of positions 1, 2, 9 and 10 of 5-*O*-cinnamoyltaxicine I, 9189
taxanes, synth of bicyclo[6.4.0]dodecane system present in taxanes by Haller-Bauer cleavage in tricyclo[8.2.1.$0^{2,9}$]trideca-13-ones, 2289
taxanes, synth of a carbonate precursor to taxane involving condensation of the α-trimethylsilyloxyaldehydes with cyclohexenyllithium, 3313
taxanes, synth of three C-4 methyl ether bearing paclitaxel analogues and unexpected reactivity of 4-deacetyl-4-methyl ether baccatin III, 3935
taxanes, 2'-*epi*-taxol, synth from natural Taxol® by formation of oxazoline on the side chain with concomitant inversion of the C-2' followed by hydrolysis, 4785
taxanes, tricyclic ring system of the taxane diterpenes, synth *via* an A→ABC intramolecular Diels-Alder construction and subsequent elaboration to a taxinine analogue, 8069
taxol, 11,12-dihydro-4-deacetyldocetaxel, synth from 10-deacetylbaccatin III, 1777
tedanolide, an anti-tumour macrolide from Caribbean sponge *Tedania igunis*, application of computer-aided conformational analyses to synth of key 18-membered intermediate to, 385
trichothecinols A-C, anti-tumour promoting sesquiterpenoids from the fungus *Trichothecium roseum*, structure and inhibitory activity against Epstein-Barr virus early antigen activation, 9219
see also Anticancer agents

Antivirals

acyclic nucleoside phosphonic acids in the purine and pyrimidine series, 4701
antiviral nucleoside oxetanocin A, synth of *trans, trans*-4-aryl-2,3-oxetanedimethanols, analogues of, 7667
2'-deoxy-5-ethyl-4'-thiouridine, potent anti-Herpes virus agent, synth using acyl carbamate directing groups, 1867
1,5-dideoxy-1,5-(alkyl)imino-2-*C*-methyl-D-glucitols, deoxynojirimycin analogues, synth as α-glycosidase inhibitors and antiviral agents, 1355
1-ethoxymethyl-5-nitro-6-substituted uracils as potential HIV-1 reverse transcriptase inhibitors, synth and biological activity, 1031
halitunal, diterpene aldehyde with antiviral activity against mourn coronavirus strain A59, synth from (+)-genipin, 2253
herpes simplex and HIV, macrolactin A, 24-membered polyene macrolide from deep sea bacterium, synth of the C11-C24 segment from *rac*-(methyl 6-oxo-2,4-hexadienoate)$Fe(CO)_3$, 9169
HIV, scopadulcic acids A and B from *Scoparia dulcis*: scalemic synth of the acid skeleton by γ-alkylation at C-9 in abietane framework and ring-D formation by aldol and alkylation reactions, 8459, 8463
2'-hydroxyethylcyclopropyl carbocyclic nucleosides, potential antivirals against HSV, HCMV, MBV and HIV, synth from D-mannitol, 8849
L-isomers and modified D-guanine analogues of anhydrohexitol nucleosides, antiviral activity, 8147
phenoxan, HIV-1 inhibitor from *Poliangium spec.* PL VO19, synth from ethyl 2-methylacetoacet-

ate, 2997
3'-phosphonate analogues of 2',3'-dideoxynucleosides, synth as potential antivirals, 4297
(*S,S*)-3-prolylazetidin-2-one, key component in synth of HIV gp120 constrained immunogen, synth from D-serine, 965
Sch 65676, fungal metabolite with inhibitory activity against the cytomegalovirus protease (a β-herpes virus), 3943
Sch 68631, phenanthraquinone antibiotic from *Streptomyces* sp., hepatitis C proteinase inhibitor, 7229
sulfated β-1,6-linked oligosaccharide mimetic, potent inhibitor of HIV replication, synth, 2549

Arbuzov reactions
intramolecular – of dialkyl phenylphosphonites initiated by anodic oxidation, 1625

Arenes
η^6-arene-$Cr(CO)_3$ complexes, radical cyclisation of, synth of mono-demethoxylated hydrophenalene-$Cr(CO)_3$ derivs which are precursors for the synth of antiinflammatory pseudopterosins, 2947
arenediazonium salts, Heck reactions of with 2,5-dihydrofuran, synth of 4-substituted furan-2(5*H*)-ones, 8625
1,2-bis(2-bromo-3,5-di-t-butylphenyl)ethane, reaction with (2,4,6-tri-t-butylphenyl)phosphide, synth of *E*-bis(2,4,6-tri-t-butylphenyl)diphosphene, 7815
bromo- and iodoarenes, reaction with potassium tellurocyanate, synth of aryl methyl tellurides, 4361
chloroarenes, nickel(0)-catalysed cross-coupling with phenylboronic acids, synth of biaryls, 2993
conversion into chiral cyclohexenones by nucleophilic additions to $Cr(CO)_3$ complexes, 3087, 3089
1,1-dichlorodiphenylmethanes, synth by reaction of chlorobenzotrifluorides with aromatic compds, 4063
(η^6-fluoroarene)tricarbonylchromiumcomplexes, nucleophilic aromatic substitution of, synth of arylpiperazines, 8487
methylarenes, photochemical dichloromethylation of, synth of the corresponding dichloromethyl analogues, 8217
nitroarenes, reaction with tris(benzotriazol-1-yl)methyl anion and subsequent treatment with zinc bromide and hydrochloric acid yields *p*-nitroarylaldehydes *via* *p*-bis(benzotriazol-1-yl)-methylated products, 347
pentafluorobenzene, alkylation of by propane in the presence of aprotic organic superacids CBr_4nAlBr_3 (n=1 or 2), 3363
resorcinarene cavitands, selective functionalisation of starting from tetrakis(bromomethyl)-cavitands, 5167
1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldi oxy arene systems, stereo- and regioselective ether-ring opening of with boron tribromide, 3651

Arndt-Eistert reactions
homologation of carboxylic acids under ultrasonic radiation, 1781

Aromaticity
1,3-di-t-butyl-2-chloro-1,3,2-diazaphospholejonic (phosphenium cation) character compared with its 4,5-dihydro analogue, 9025

Aromatisation
α-alk-3,1,5-enediynyl-α-methoxymalonate esters, hydrolysis triggering cyclo– to diradical *via* enynyl allene deriv, 865
cyclo–– of propargyl β,β-di(alkylthio)vinyl benzyl alcohols using trimethyl borate, migration of an alkylthio group, 2817
4-phenyl-8-methoxyoct-4-ene-2,6-diyn-1-amine, pyridoxal-mediated cyclo–, 5397
radical cyclization with – to anilines of 2,4,5-hexanenitriles on heating in cumene, 839

Arsenic and compds
6*H*-pyran-3-carboxylates, reaction with arsonium ylids, formation of vinylcyclopropane and dihydrofuran derivs, 9349

Aryl halides
bowl-shaped all-carbon framework surrounding – moiety, synth, structure, reactivity, 3141
bromides, synth of aryl amines by Pd-catalyzed coupling from – and amines, 7181
dienyl tert. amines, synth by termolecular Pd-catalyzed cascade insertion of allene into alkynyl iodo-arenes, 6565
iodides, Pd-catalyzed coupling with difluoroethenezinc iodide, synth of (*Z*)-α,β-difluorostyrenes, 7237
rates of electron transfer in solution and at electrode to substituted bromobenzenes in DMF, 3553
regioselective lithiation of chloro- and bromofluoroarenes, 6551

Arylation
aryl transfer from B to I(III), reaction of (diacetoxyiodo)arenes with tetraarylborates in AcOH, synth of diaryliodonium tetraarylborates, 8421

2-chloro-quinoline, Pd-mediated substitution, 8281
of 2-*exo*-cyano-7-oxabicyclo[2.2.1]hept-5-en-2-*endo*-yl acetate and 7-oxabicyclo[2.2.1]hept-5-en-2-one, regioselectivity of, 2225
gibberellin *C*- on attempted radical deoxygenation, 4255
Heck arylation of *N*-allylsulfonamide and subsequent hydroformylation, synth of 4-aryl-2,3-dihydropyrroles, 3947
of indoles with aryl electrophiles in the presence of KF/Al_2O_3 and catalytic 18-crown-6 in DMSO, synth of 1-arylindoles, 299
phenylation of terminal acetylenes by Ph_3BiF_2 in the presence of catalytic amounts of CuCl, synth of phenyl substituted acetylenes, 4051
triarylbismuth/$Cu(OAc)_2$ – of N-H bonds, promotion by triethylamine or pyridine, 9013

Arynes
1,2-didehydro-*o*-carborane, generation and trapping from the benzene adduct, synth of 1,4-naphthalene adduct, 7217
3,4-didehydro-2,2,6,8-tetramethyl-2*H*-[1]benzopyran, generation, trapping, 1313
Diels-Alder synth of 1-naphthols by benzyne route, 3097
intramolecular cycloaddition of an azadiene and an aryne, route to lycorine alkaloids, 405

Asymmetric induction
chiral 3-unsubstituted β-lactams, synth by asymmetric Reformatsky reactions, 4095
Henry (nitroaldol) reactions of α,α-difluoroaldehydes catalyzed by lanthanide lithium BINOL complexes, 9081
internal 1,2-–, influence of γ-ether groups on organocuprate addition to αβ-unsaturated esters, synth of polypropionate and related motifs, 7473
remote – in alkylation of propionate group attached to carbohydrate template, 2061

Asymmetric reactions
Pd(II) complex with chiral pyridine-bisphosphine ligand in asymmetric allylic alkylations, 4475

Asymmetric synthesis
of β-alkoxy substituted phenethylamine analogues from 2-chloroacetophenone, 3045
of α-alkyl-β-hydroxyproline derivs by alkylation of the dianion from 3(*S*),2(*R*)-3-hydroxyproline ethyl ester with LDA, 5441
of α-amino acid derivs by reaction of racemic ethyl *N*-phenylsulfonyl-α-bromoglycinate with alkyl aluminium reagents, 4795
(2*S*,3*R*,4*S*)-2-(benzylamino)-1-cyclohexyl-6-methylheptane-3,4-diol, 4525
of the C(10)-C(16) segment of bryostatin from a *meso* oxabicyclic ketone, 7695
of 2-deoxy-2-fluoro-γ-aldonolactones and conversion to 2-deoxy-2-fluoropentoses, 4345
of (diene)$Fe(CO)_3$ complexes by reaction of *meso*-2,4-hexadien-1,6-dial $Fe(CO)_3$ complex with alkylzincs in the presence of (*S*)-(+)-diphenyl-(1-methylpyrrolidin-2-yl)methanol, 3345
of 1- and 1,1'-ferrocenepropanoic acids from ferrocenyl ketones, 7861
of β-isopropylphenylalanine, – of all diastereomers using 4-phenyloxazolidin-2-ones as chiral auxiliary, 1563
of 3-substituted 1(3*H*)-isobenzofuranones (phthalides) by reduction of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, 2205
of the tremulane skeleton by tandem cyclopropanation/Cope rearrangement, 3967
see also Enantiocontrol, Enantioselection

Atropisomerism
atropisomers of *N,N*-dihexyl-2-alkyl-1-naphthamides by deprotonation of *N,N*-dihexyl-1-naphthamides, 2899
1,1'-binaphthyl-2-carboxylates, chiral synth from chiral 1,4-naphthalene cyclophane, 2057
chiral forms of 6,6'-dimethoxybiphenyl-2,2'-diamine, -2,2'-(bisdiphenylphosphine), -2,2'-diiodide, 5343, 5347
porphyrins with lateral aromatic branches, – and liquid crystal formation, 7641
o-substituted anilide –, use in diastereoselective enolate chemistry, 7607

Autoxidation
of phosphonium salts, synth of symmetrical *Z*-olefins, 7703

Aza compds
6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl group, synth from *N*-Boc bis-aziridine, 7717
ansa bridged 1-azafulvene roseophilin, synth of bicyclic core of from δ-(sulfonylamino)-α-epoxy ketones, 2545
aza sugars, isomerization of polyhydroxy pyrrolidines, piperidines, and azepanes, 1609, 1613
azacyclooctene and azacyclononene containing substrates, synth *via* spirocyclic ammonium ylid intermediates, 2165
azatriquinane, azatriquinacene, synth from pyrrole and dimerisation by *N*-oxidation, 131
1-deoxy-azasugars, asymmetric synth by kinetic

resolution of an α-furfurylamine deriv, synth of deoxymannojirimycin, 1461
dicyanoazomethine ylids derived from 3,4-diazanorcaradienes, cycloadditions, 1583, 1587
epilachnene, norepilachnene, homoepilachnene, 9-propyl-10-aza-cyclododecan-12-olide and epilachnadiene, azamacrolides from Mexican bean beetle, synth from epoxychlorides, 8613
3-ethyl-1-azabicyclo[1.1.0]-butane, kinetics of the reaction with phenylchlorocarbene, 5849
5-methyl-1-azabicyclo[2.2.1]heptane and 1,5-dimethyl-1-azoniabicyclo[2.2.1]heptane system by sequential cyclization of β-ammonio radicals, 5805
[6+6]-photocycloadditions in face to face benzo/pyridazino systems, approach to diazapagodanes, 4491
9-propyl-10-azacyclododecan-12-olide, component of the defensive secretion of the Mexican bean beetle *Epilachna varivestis*, synth from methyl 9-ketododecanoate and from *N*-hydroxyethyl lactam, 2141, 2145
substituted pyrrolo[2,3-*b*]pyridin-3-ones from 2-amino-3-iodo-pyridine derivs by a palladium heteroannulation process, 43
symmetrical and unsymmetrical bis-tetraaza-macrocycles, synth using trivalent protecting groups, 7711

Azepanes
isomerization of polyhydroxy – and piperidines, 1613

Azepines
N-(4-tolyl)perhydroazepine, Vilsmeier formylation of, example of the t-amino effect, 2679

Azepinones
7,7-dialkyl 3-amino-2-oxohexahydroazepine-1-acetic esters, synth, 8985

Azetidines
3-acetamido-3-alkyl –, synth by Ritter reactions from the corresp. hydroxy-amines, 1297
1-anisyl-4-phenylazetidine-2,3-dione, addition of MeMgBr, use in construction of paclitaxel analogues, 6495
azetidine-type taxanes, synth from 2'-deacetoxyaustrospicatine, 3203
4-silyl-substituted 1,2-thiazetidine 1,1-dioxides, selective bond cleavage with $EtAlCl_2$, formation of (*E*)-vinylsulfonamides, 2257
N-substituted-3-azetidinylidenecarbenes, generation by reaction of *N*-tosyl- and *N*-benzhydrylazetidin-3-one with diethyl diazomethylphosphonate, 8101

Azetidinones
4-acetoxy– condensation with silyl enol ether, Lewis acid catalysis in synth of sanfetrinem precursor, 3891
4-acetoxy-3-(1-silyloxyethyl)-2–, conversion into α-methyl-4-oxo-3-(1-silyloxyethyl)azetidine-acetic acid, carbapenem intermediate, 4967
α-amino-β-lactams, microwave-assisted synth using the tetrachlorophthalimido group as a masked amino substituent, 6989
enyne-2-azetidinones, Pauson-Khand cyclization forming tricyclic β-lactams, 6901
ethyl 3-oxo-4-(phenylthio)butyrate, baker's yeast reduction, enantioselective *N*-methoxy-3-(phenylthiomethyl)azetidin-2-one synth, 7533
fused tricyclic β-lactams, synth from *o*-bromobenzaldehyde and allyl amine by aryl radical cyclisation in the presence of tributyltin hydride, 1363
β-lactam synth from β-amino acids synth from *N*-sulfinyl imines, 3881
β-lactams by [2+2] cycloaddition of an imine and an acid chloride, subsequent rearrangement provided enantiomerically pure pyrrolidinones, 4627
β-lactams by radical cyclisation of *N*-ethenyl trichloroacetamides, γ-lactams are formed when exposed to nickel powder and acetic acid in 2-propanol, 1397
β-lactams from β-chloroglutaric anhydride, 7245
monocyclic enediynyl β-lactam antibiotics, synth and biological activity, 2475
3-phthalimido β-lactams, diastereoselective synth *via* a two step Staudinger reaction, 4409
(*S,S*)-3-prolylazetidin-2-one, key component in synth of HIV gp120 constrained immunogen, synth from D-serine, 965
reaction with a zinc enolate derived from chiral non-racemic 2-methoxycyclohexanone, synth of an intermediate to trinem antibiotics, 7441
synth of tribactam precursor by cycloaddition of t-butyl lithioacetate to a trimethylsilylimine, 2467
N-tosyl- and *N*-benzhydrylazetidin-3-one, reaction with diethyl diazomethylphosphonate, synth and trapping of intermediate *N*-substituted-3-azetidinylidenecarbenes, 8101
3-unsubstituted β-lactams, synth by asymmetric Reformatsky reaction and conversion into cholesterol absorption inhibitors, 4095

Azetines
1-azetine derivs and isoquinoline by irradiation

of substituted α-dehydrophenylalanine *via* photoacetyl migration, 5917

Azides

approach to chiral synth of sparteine by intramolecular Schmidt reactions, 1531

aroyl –, bistrifluoroethylaniline formation with $NaBH_4$/TFA, 7213

3-arylprolines, synth using reductive cyclization of azido-olefins to form pyrrolidine ring, 4091

α-azido esters, stereospecific synth using trisyl azide or Mitsunobu reactions, 7477

N-azido and nitroso groups, intramolecular cyclisation of, synth of 4*H*-[1,2,3]triazolo[4,5-*c*]-[1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivs, 8577

azido reductive cyclisation with hexamethyldisilathiane, synth of pyrrolo[2,1-*c*][1,4]benzodiazepine antibiotics, 6803

5-azido-5-deoxyaldopentose ketene dithioacetal bis(sulfones), intramolecular 1,3-dipolar cycloaddition of in the synth of imino sugar analogues, 3925

3-azido-1-chloro-2-trimethylsilyloxypropane, enantioselective synth from epichlorohydrin involving dynamic kinetic resolution, 7937

1,2-azidohydroperoxides by photooxygenation of alkenes in presence of azide ions, photoinduced electron transfer mechanism, 8367

azidopyridazines, reduction to corresponding aminopyridazines using Fe/NH_4Cl in organic solvent-water two-phase solution, 7059

chemoselective reduction of aryl and aroyl – to amines and amides using $Fe\text{-}NiCl_2.6H_2O$, 4559

imidochromium(V) trichloride(dme) catalysis of tosylaziridine ring-opening by trimethylsilyl azide, effect of molecular sieve, 891

metal-catalyzed diazo transfer from triflyl – to amines, synth of aliphatic –, 6029

6-monoazido-6-monodeoxy-β-cyclodextrins, transformation into urea-linked β-cyclodextrin dimers *via* phosphinimines, 4011

oligonucleotides containing 2′-azido- and 2′-amino-2′-deoxyuridine, synth using phosphotriester chemistry, 3227

oxidative azidonation of glycals using PhIO/$TMSN_3$ reagent combination, synth of diaminopyrans, 303

phthalhydrazide libraries, synth in solution from substituted hydrazines and phthalimides, 3351

1,1,3,3-tetramethylguanidinium azide, use in azidolysis of epoxides, synth of β-azidoalcohols, 1675

triisopropylbenzenesulfonyl azide for the azidation of 1,4-benzodiazepin-2-ones, synth of 3-amino-1,4-benzodiazepin-2-ones, 6685

Azines

functionalised 1,2-diazines bearing a sulfur-based leaving group, synth by inverse electron demand Diels-Alder reaction of polymer-supported 1,2,4,5-tetrazines, 8151

10,11-[1,4-naphthalenedione]dipyrido[3,2-*a*;2′,3′-*c*]phenazine, an acceptor polypyridine ligand, synth by condensation of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, 5437

phenazostatins A and B, phenazine antibiotics with neuronal cell protecting activity from culture broth of *Streptomyces* sp.833, structures, 8529

1,2,4-triazines and 1,2,4,5-tetrazines, inverse electron demand Diels-Alder reactions with 3-substituted indoles, 5061

Aziridines

aziridination of α,β-unsaturated esters by (ethoxycarbonyl)nitrene, synth of aziridine-1,2-dicarboxylates, 3777

aziridination of alkenes by chiral 3-acetoxyamino-3,4-dihydroquinazolin-4-ones, reagent-controlled diastereoselectivity in, 5179

aziridination of styrene derivs by using (salen)-manganese(III) complex as catalyst, 9245

N-Boc bis-aziridine, starting material for synth of 6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl group, 7717

aziridine-2-carboxylates, synth by reaction of hexahydro-1,3,5-triazines with alkyldiazoacetates in the presence of tin(IV) chloride, 7069

aziridinocyclopropanes derived from 2-phenylsulfonyl-1,3-dienes, BF_3-induced rearrangement of, synth of the tropane alkaloid skeleton, 3371

2-benzoyl-1-cyclohexyl-3-phenyl–, microwave-induced cycloadditions, 4203

bis-oxazoline ligands for asymmetric Cu-catalyzed cyclopropanation and aziridination of olefins, 6189

(*S*)-*N*-t-butoxycarbonylaziridine-2-carboxylate derivs, synth and reaction with copper 'catalysed' Grignard reagents to yield protected α-amino acids, 3761

by boron aldol reaction of α-halosubstituted thioacetates with silyl imines, 3747

2-(β-carboxyvinyl)–, Pd-catalyzed isomerizations, stereochemical preferences, 2849

chiral phase transfer synthesis from olefins and *N*-arylhydroxamic acids, 3183
N-Boc cycloalkylaziridines, ring opening reaction of, synth of *trans*-3-(2-aminocycloalkyl)indoles, 683
1,3-di-t-butyl –, ring-expansion with thiosemicarbazide to a 3-iminohexahydro-1,2,4-triazin-6-one, 8695
N-ethoxycarbonyl– 2-carboxylates, regioselective ring-opening, $MgBr_2$ forming β-bromo-α-aminoester, NaX forming α-halo-β-aminoester, 6893
generation of Ar_2C in TFE by photolysis of 1-(diarylmethyleneamino)-2,3-diphenylaziridines, carbene protonation, 1197
imidochromium(V) trichloride(dme) catalysis of tosylaziridine ring-opening by trimethylsilyl azide, effect of molecular sieve, 891
D-mannitol derived bis-aziridines, nucleophilic opening of by 3-deoxy-3-amino-D-glucose or by 3-deoxy-3-thio-D-glucose, synth of sulfur and nitrogen linked aza-disaccharides, 5095
N-methoxy–, synth by intramolecular trapping of carbene from α-diazo-β-ketoamide by *O*-methyloxime, 7205
2-methyl *N*-(*p*-toluenesulfinyl)aziridine-2-carboxylic acid, ring-opening to give α-methylphenylalanine and α-methyl-β-phenylserine, 5473
1-propargyl-2-vinylaziridines, rearrangements induced by alkyl lithiums, formation of tetrahydropyridines and pyrrolines, 2495
serine-derived aziridine, ring opening by pyrazole and 1,2,4-oxadiazolidine-3,5-dione, synth of (*S*)-β-pyrazolylalanine and (*S*)-quisqualic acid respectively, 5225
study of mechanism of activation of C(7)ethylenediamine substituted mitomycins, 2337
N-sulfinylaziridine 2-carboxylic acid, ring-opening of, asymmetric synth of D-*erythro*- and L-*threo*-sphingosine, 4349
N-tosyl phenylaziridines, ring-opening with allylsilanes in the presence of $BF_3.Et_2O$ to form γ-amino olefins, 8493

Azirines

2-azi-camphane, sterically congested diazirine, synth from camphor, 6647
diazirine, generation of 2-methylcyclohexanylidene from – within the cavities of α-, β- and γ-cyclodextrin by photolysis, 3235
1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, nucleophilic substitutions with, synth of urethano-, amido- and sulfonamido-[60]fullerenes, 4683

Azo compds

azobenzenes and azoxybenzenes, reduction to hydrazobenzenes by sodium dithionite using dioctylviologen as an electron transfer catalyst, 6721
azomethine imines by 1,3-dipolar cycloreversion of 1,3,4-oxadiazolidine, construction of pyrazolidine heterocycles, 4323
covalently-connected azobenzene-porphyrin derivs, synth from the corresponding azobenzene aldehydes using the Lindsey condensation, photochemical properties, 699
4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-diazabutadiene, cyclisation by electron-rich olefins, synth of *N*-aminopyrroles and pyridazines, 1351
diethyl azodicarboxylate (azodiformate), ene reactions with allylic and homoallylic silanes, regio-control, 6607
photoisomerizable linker containing an azobenzene unit for connecting oligonucleotide segments, synth, 637
trifluoromethyl azomethine ylids, synth by heating of *N,N*-dimethyl-bis(methylthio)-*ortho*-trifluoroacetamide or by deprotonation of trifluoromethyl thioamidium salts, 5515

Azocines

disubstituted scalemic azocines, synth *via* intramolecular alkylation and olefin metathesis, 4317

Azonia compds

5-methyl-1-azabicyclo[2.2.1]heptane and 1,5-dimethyl-1-azoniabicyclo[2.2.1]heptane system by sequential cyclization of β-ammonio radicals, 5805

Azulenes

azulene-containing donor-acceptor molecules, synth as second-order nonlinear chromophores, 419
β-(10-benz[*a*]azulenyl)-αβ-unsaturated ketones, formation by intramolecular rearrangement of 2-(2-furyl)phenyltropylium ion, 4965

Bacteria

Chromobacterium violaceum, configuration of *N*-acetyl-α,β-dehydrotryptophan ethyl ester produced by L-tryptophan 2′,3′-oxidase from –, 3309
Pseudomonas fluorescens, structural elucidation of pyoverdins which are chromopeptides produced in iron-deficient cultures of, 3329
Zymomonas mobilis bacterium and the cyanobac-

terium *Anacystis montana*, configurations of carbapseudopentose moieties of hopanoids of, 1791

Baeyer-Villiger reactions
asymmetric – oxidation of cyclobutanones using Sharpless epoxidation conditions, 7583
hydrotalcite catalysis of m-CPBA – oxidation of ketones, 4555
microbiological – oxidation of bicycloheptenone using the fungus *Cunninghamella echinulata*, synth of (+)-multifidene and (+)-viridiene, 1011
oxidation of bicyclo[2.2.2]oct-5-en-2-one followed by Pd(0)-catalysed lactone migration, synth of *cis*-fused hydrobenzofurans, 7809

Barbier reactions
allylation of imines with allyl bromide using Mg or Zn, 4187
sonochemical Barbier-type reaction of aryl bromide, magnesium powder, 1,2-dibromoethane and bis(tributyltin)oxide, synth of arylstannane, 495

Bauer-Haller reactions
cleavage in tricyclo[8.2.1.$0^{2,9}$]trideca-13-ones, synth of bicyclo[6.4.0]dodecane system present in taxanes, 2289

Baylis-Hillman reactions
use of aryl acrylates and synth of 5-methylene-1,3-dioxan-4-ones, 1715

Benzazepines
2-benzazepine-1,5-diones, synth by ring enlargement of *N*-alkyl-3-hydroxy-3-propargylisoindolin-1-ones, 393
8-hydroxy-1-(spiro-1'-indan)benzazepines, synth utilizing the thiomethyl group to activate the aromatic ring system, 7345

Benzimidazoles
N-acyl –, Wittig reactions with stabilized phosphoranes, synth of β-acyl- (carboxy-)vinyl –, 7249
1-aryl/cycloalkyl-benzimidazole-2-carbonitriles, synth from *o*-phenylenediamines and 4,5-dichloro-1,2,3-dithiazolium chloride, generation of S_2, 4589
N-aryl-*N'*-methoxyureas, oxidative cyclization by $PhI(OCOCF_3)_2$ forming 1-methoxybenzimidazolin-2-ones, 2361
7-nitro-2-propylbenzimidazole 3-oxide, synth by action of base on *N*-butyl-2,6-dinitroaniline; analogous reactions usually failed, 767
2-phenyl-*N,N*-dimethylbenzimidazoline, reaction with α,β-epoxy ketones, synth of corresponding aldols, effect of water on reaction, 7079
synth on solid support, 4887

Benzisothiazoles
3-alkyl 5,6-dicarboxylates by trapping of 4,5-dimethyleneisothiazoles by DMAD and aromatization, 4189
1,2-benzodithiol-3-one 1-oxide, reaction with primary amines, synth of 2-substituted 1,2-benzisothiazol-3(2*H*)-ones, 5337

Benzisoxazoles
3-amino-1,2-benzisoxazoles, synth by cyclisation of *ortho*-substituted benzonitriles, 2885
3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivs, photolysis of, synth of 2-acetylaniline derivs *via* arylnitroxyl radicals, EPR spectroscopy, 2895
3-(4-pyridinylamino)-1,2-benzisoxazoles, prep *via* an amidoxime cyclisation, 995

Benzocyclobutenes
dihydro–, synth by acid-catalyzed intramolecular photocyclization of 3-alkenyloxyphenols, 2027

Benzodiazepines
3-amino-1,4-benzodiazepin-2-ones, prep *via* azidation utilising triisopropylbenzenesulfonyl azide, 6685
1,4-benzodiazepine-2,5-diones, synth using polymer supported amino acids and *o*-nitrobenzoic acids or protected anthranilic acids, 8081
pyrrolo[2,1-*c*][1,4]benzodiazepine antibiotics, synth by reductive cyclisation of the azide employing hexamethyldisilathiane, 6803
pyrrolo[2,1-*c*][1,4]benzodiazepines, synth of imine form of, synth of antibiotic DC-81 and its thio analogue, 2281
2-trichloromethyl-4-aryl-3*H*-1,5-benzodiazepines synth by reaction of β-methoxyvinyl trichloromethyl ketones derived from acetals and *O*-phenylenediamine, 9155

Benzodithioles
1,2-benzodithiol-3-one 1-oxide, reaction with primary amines, synth of 2-substituted 1,2-benzisothiazol-3(2*H*)-ones, 5337

Benzofurans
allyl phenyl ethers related to mycophenolic acid, establishment of intramolecularity of unusual rearrangement of *via* a crossover experiment, 21
4-(2-aminopropyl)-7-bromo-5-methoxy-2,3-dihydro–, improved synth, 7889
5-(2-aroyl-5-benzofuranylmethyl)-thiazolidine-2,4-dione, insulin-sensitivity enhancers, synth from 4-hydroxy-*meta*-phthalaldehyde, 9267
dihydro-benzofuran nucleus of a 5-LO inhibiting

hydroxyurea, synth by tandem nucleophilic addition and intramolecular cyclisation, 4639
cis-fused hydrobenzofuran derivs, synth by Baeyer-Villiger oxidation of bicyclo[2.2.2]oct-5-en-2-one followed by Pd(0)-catalysed lactone migration, 7809
(±)-licarin B and eupomatenoids-1 and -12, benzofuranoid neolignans, synth by reactions of styrenes with *N*-phenylsulfonyl-1,4-benzoquinone monoimines followed by conversion of N-phenylsulfonyl moiety to propenyl, 6969
3-spiro-2(3*H*)-benzofuranones and 3-spiro-2-oxindoles, synth by reaction of 2-halophenols and -anilines with vinyl halides or triflates, 695
sterically hindered 3-methylidene-benzofuran, reversal in facial selectivity in the Sharpless asymmetric dihydroxylation, 1375
synth (±)-aflatoxin B_2 precursor by Rh acylcarbenoid cycloaddition, 2391
2-Benzofurans, *see* Isobenzofurans

Benzonitriles
ortho-substituted benzonitriles, cyclisation to 3-amino-1,2-benzisoxazoles, 2885

Benzopyrans
2,3-disubstituted and 2,3,3-trisubstituted 2H-1-benzothiopyran derivs, synth by cyclisation of 3-(2-t-butylthiophenyl)-prop-2-en-1-ols, 5077

Benzoquinones
1,4-benzoquinones, Lewis acid-promoted reactions of thio- and silyl-allenes with, 327
3,5-di-t-butyl-1,2-benzoquinone,1,3-dipolarcycloaddition with nitrile-*N*-oxides, formation of spiro-1,3-dioxazoles, 5623
2-formyl, 2-acetyl, 2-methoxycarbonyl −, generation and Diels-Alder trapping by citral dienol acetate, 8037
2-methoxycarbonyl-*p*-benzoquinone, cycloaddition of D-glucose based dienes with *in situ* generated −, synth of cycloadducts which could be transformed into functionalised decalins, 4055
N-phenylsulfonyl-1,4-benzoquinone monoimines, reactions with styrenes, key step in synth of benzofuranoid lignans (±)-licarin B and eupomatenoids-1 and -12, 6969
see Quinones

Benzothiazepines
trans- and *cis*-3-hydroxy-2-(4-methoxyphenyl)-2,3-dihydro-1,5-benzothiazepin-4(5*H*)-one, microwave assisted synth, 6413

Benzothiazoles/benzothiazolones
2-carboxy-4-hydroxy-6-(2-amino-2-carboxyethyl)-benzothiazole, synth by oxidation of pheomelanins with hydrogen peroxide, 6799

Benzothiophenes
benzothienoindolizidines, synth *via* intramolecular aryl radical cyclisation of enamide or intramolecular Heck reaction of enamidone, 7707
2,4,6-triisopropylthiobenzophenone, C=O...H versus C=S...H abstraction geometry, 2125

Benzotriazoles
O- and *N*(1)-acylated derivatives of 1-hydroxybenzotriazole, 4237
N-(α-aminoalkyl)benzotriazoles, Mannich-type reaction with silyl enolates, synth of the corresponding β-amino ketone or ester derivs, 3731
1-benzotriazolyloxy-tris(dimethylamino)phosphonium hexafluorophosphate, use for direct activation of a methyl ester, 4233
1-benzotriazolyloxy-tris(dimethylamino)phosphonium hexafluorophosphate, use in forming β-lactones, 4237
synth of pyrroles and annulation to indoles using − methods, 5641

Benzoxathioles
2-(1,3-benzodithiol-2-ylidene)-1,3-benzoxathiole (dibenzo-oxatrithiafulvalene), synth and characterisation, 2931

Benzoxazepines
1,4−*via* Bischler-Napieralski reactions with *N*-(β-aryloxyethyl)oxamides, incorporation of acetonitrile, 4275

Benzoxazines
5-t-butyldimethylsilyloxy-7-hydroxymethyl-2,1-benzoxazin-3-imine 1-oxide, intermediate in synth of antibiotic FR-66979, 5243
(*S*)-7,8-difluoro-3-methyl-2*H*-1,4-benzoxazine, synth by $ZnCl_2$-assisted Mitsunobu cyclization, 9317
radical cyclization on a chiral perhydro-1,3-benzoxazine template, synth of 3-methylpyrrolidine, 9085
synth of indolizino[1,2-*b*]quinolin-4-ones by intramolecular cycloadditions of 4*H*-3,1-benzoxazin-4-ones, 5679

Benzoxazoles
2-arylbenzoxazoles, synth from phenolic Schiff bases by thianthrene cation radical perchlorate in the presence of 2,6-di-t-butyl-4-methylpyridine, 8869
3a,4,5,7a-tetrahydrobenzoxazole derivs from homochiral 4-benzamido 2-cyclohexenone involving methylene-addition to the carbonyl and intramolecular oxirane-ring opening, 4059

Benzylation
Collman reagent with benzyl bromide dibenzylates C_{60}, 2049
Friedel-Crafts – of toluene by benzyl chloride and benzyl alcohol on sulfated zirconia, role of benzyl ether, 5405
Biaryls
axially chiral biaryls, synth by nucleophilic substitution of tricarbonyl(2,4,6-trimethylphenyl-2-methoxybenzoate)-chromium complexes with aryl Grignard reagents, 6359
biaryl formation using the Suzuki protocol: effect of base, halide and protecting group, 8829
biaryls *via* nickel(0)-catalysed cross-coupling reaction of chloroarenes with phenylboronic acids, 2993
2,2'-bipyridine-5,5'-dicarbaldehyde, synth from 5,5'-dimethyl compd *via* the bisdimethyl enamine, 7503
2,5-di(alkylthio)biphenyls, synth by cyclo–aromatization of propargyl β,β-di(alkylthio)vinyl benzyl alcohols using trimethyl borate, migration of an alkylthio group, 2817
heterobiarylmethylphosphonates, synth by Stille coupling between diethyl bromobenzylphosphonates and heterocyclyl tributyl stannanes, 7611
Suzuki cross-coupling of polymer-bound arylsilanes, 2703
Suzuki reactions catalyzed by preformed Pd and Pd/Ni clusters, 4499
Bicyclic aliphatic compds
bicyclo[4.4.1]undeca-2,4-diene and bicyclo[4.2.1]-nona-2,4-diene systems, studies on electrocyclisation in, 2553
bicyclo[6.4.0]dodecane system present in taxanes, synth by Haller-Bauer cleavage in tricyclo[8.2.1.$0^{2,9}$]trideca-13-ones, 2289
bicyclo[4.1.0]heptanes and bicyclo[6.1.0]nonanes, dimethyldioxirane oxidation, formation of keto groups in the larger ring, 5363
bicyclo[3.1.0]hexane derivs as vitamin A A-ring precursors, 7637
3-t-butyldimethylsiloxy-8-methyl-8-azabicyclo[3.2.1]oct-6-ene *N*-oxide, Meisenheimer rearrangement of as step toward 3-hydroxy analogue of physoperuvine alkaloid, 97
(+)-*trans*-camphenesulfonamide, synth from camphorsulfonamide *via* acid-catalysed rearrangement of the corresponding carbinol, 3267
chiral bicyclo[4.4.1]undeca-2,4,8-triene systems, synth by [6+4] photocycloaddition of cycloheptatriene Cr(CO) complexes to dienes, 5293
cis-decalins, constituents of the basic framework of many biologically active compds, synth based on radical ring expansion and cyclisation of α-iodomethylcyclopentanones, 6355
1,5-di-t-butylbicyclo[2.2.2]octa-5,7-diene-2,3-dione, BF_3-catalyzed rearrangement to 1,6-di-t-butylbicyclo[3.2.1]octa-3,6-diene-2,8-diones, 8271
1,4-dimethoxybicyclo[2.2.2]oct-5-en-2-one,substitution of methoxy groups by alkyl by sequence involving bicyclo[3.2.1]octane intermediates, synth of bicyclo[3.3.0]octan-3-ones and [3.3.3]-propellanes, 7295
5,6-dimethylbicyclo[4.3.0]nonane-3,8-dione and -8-ones from (*R*)-carvone, 1679
6,7-dioxa-, 3,6,7-trioxa-, 6,7-dioxa-3-aza- and 6,7-dioxa-3-thia-bicyclo[3.2.2]nonanes,synthand antimalarial activity, 815
1-hydroxybicyclo[n.1.0]alkanes (n = 3 and 4), synth from olefinic esters *via* tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions, 1849, corrig. 6959
(±)-ledol, an aromadendrane sesquiterpene with antifungal activity, total synth using type two intramolecular Diels-Alder reaction coupled with bridged to fused ring interchange, 949
2-oxobicyclo[3.3.1]non-1-yl triflate, methanolysis of, prep of [3.3.1]propellanone, 8185
(-)-2-oxobicyclo[3.1.0]hexane-6-carboxylic acid, synth by retro-Diels-Alder strategy, 8637
2-thioxo bridgehead compds, solvolysis of as compared with their 2-oxo homologues, evidence for marked π-conjugation in 2-thioxo carbocation, 2241
5,8,8-trimethylbicyclo[5.1.0]octen-3-ones, synth involving homotropilidene rearrangement, 7303
2-vinylbicyclo[2.2.2]octenols, ring expansion of, synth of *cis*-decalin and bicyclo[4.2.2]dec-7-en-4-one derivs, 5897
Bicyclic aromatic compds
benzobicyclo[2.2.2]octatrienes bearing an electron-withdrawing group on one of the olefin moieties, effect of substituent on facial selectivity toward oxidative electrophiles, 2609
bridged bicyclo[4.2.1]nonane by sequential addition of nucleophiles to tricarbonyl(η^4-cycloheptadienyl)iron tetrafluoroborate, 7361
2-tetralones by acidic hydrolysis of epoxyamides derived from 1-tetralones, 3243
endo-thioester substituted norbornenes, cyclisation of followed by methylthio group rearrangement, synth of a diacetal trioxa-cage

compd, 8209

Bicyclic heterocyclic compds

axially substituted *trans*-3-chloro-2,4-dioxa-3λ^5-phosphabicyclo[4.4.0]decan-3-one, reaction with *O*- and *S*-nucleophiles in the presence of DBN or DBU, 2217

2-azabicyclo[2.2.1]heptane- and 2-azabicyclo-[2.2.2]octane- 3-carboxylic acids, chiral proline analogues, synth, 7577

2-benzazepines and 1,4-benzoxazepines *via* Bischler-Napieralski reactions with *N*-(β-aryloxyethyl) and (β-arylpropyl) oxamides, incorporation of acetonitrile, 4275

bicyclic core structure of neoliacinic acid, sesquiterpene from leaves of *Neolitsea acciculata*, by [2,3]-sigmatropic ring-expansion of an oxonium ylid, 5601

bicyclic ketopyrroles, synth from δ-(sulfonylamino)-α-epoxy ketones *via* intramolecular conjugate-addition to azoene intermediates, synth of bicyclic core of the 1-azafulvene roseophilin, 2545

bicyclic oxazolidine, precursor for piperidines and indolizidines, synth from (*R*)-phenylglycinol and conversion to (2*S*,3*S*)-3-hydroxypipecolic acid, 4001

bimanes, fluorescent compds, synth by Favorskii-like ring contraction of 1,3,4-oxadiazinone, 5039

chiral 5,6-bicyclic systems by palladium-catalysed [3+2]-cycloaddition reactions of phenylsulfonyl-activated unsaturated carbohydrate derivs, 2303, 2307

conformationally constrained, bicyclic, 14-residue peptide containing two overlapping i, i+7 side-chain bridges, synth, 1731

2-*exo*-cyano-7-oxabicyclo[2.2.1]hept-5-en-2-*endo*-yl acetate and 7-oxabicyclo[2.2.1]hept-5-en-2-one, regioselectivity of arylations of, 2225

2,3-diazabicyclo[2.2.2]oct-2-enes, phenyl substitution effects on rate acceleration of cation radical deazetation of, 4377

3,5-diazabicyclo[5.1.0]octa-2,5-dienes from diazanorcaradiene dicyanomethylides, 1587

2,6-dichloroimidazo[1,2-*a*]pyridine, lithiation and reaction with protected ribonolactone, synth of 5-*C*-riboside, 2365

2,3-dihydro-4*H*-1,3-benzoxazin-4-one, chiral deriv from *l*-menthone, synth and use as chiral auxiliary in aldol reaction, 3129

2,3-dihydro-1*H*,4*H*-pyrazolo[1,2-*a*]pyrazole-1,6(7*H*)-dione deriv, synth, 4891

2,3-dioxa and 2,3-oxaza bicyclo[2.2.2]oct-5-enes, enhancement of facial selectivity of a plane nonsymmetric double bond of − by introduction of a methoxycarbonyl group, 517

1,4-di(*p*-fluorophenyl)-2,3-dioxabicyclo[2.2.2]oct-5-ene, synth, antimalarial activity, 7225

1-ethoxy-3-oxabicyclo[3.2.0]heptanes, acid-catalyzed rearrangement to cyclopentanones, 2073

3-ethyl-1-azabicyclo[1.1.0]-butane, kinetics of the reaction with phenylchlorocarbene, 5849

functionalised 6-azabicyclo[3.2.1]octane system, synth by radical rearrangements of tropanes, 2201

fused "[4.1.0]bicycloheptene-pyranose" tricyclic product from Pauson-Khand reaction of 3-*exo*-methylene carbohydrate enynic deriv, 1489

trans-fused bicyclo[3.3.0]octane and bicyclo-[4.3.0]nonane systems, synth by conjugate additions of bifunctional organocopper(I) reagents to cyclopent-1-enecarbaldehyde, 5857

homoepibatidine and bishomoepibatidine, 6-(6-chloropyridin-3-yl)-8-azabicyclo[3.2.1]octane and 7-(7-chloropyridin-3-yl)-9-azabicyclo[4.2.1]nonane, synth, 3911

imidazo[1,2-*a*]pyrazines, coelenterate and *Cypridina* luciferin, synth and properties of 5-hydroperoxide analogue, 8425

imidazo[2,1-*c*]- and [1,2,4]triazolo[3,2-*c*]-[1,2,4]triazin-4-ones, nucleoside derivs by ribosylation at N-1, -2, and -8, 901

γ-lactams related to penicillins and cephalosporins, synth from thiazine, 5601

α,β-methano-heterocycles, synth from α-oxo-β-trimethylstannylmethyl pyrroles, piperidines, tetrahydrofurans, 8967, 8971

5-methyl-1-azabicyclo[2.2.1]heptane and 1,5-dimethyl-1-azoniabicyclo[2.2.1]heptane system by sequential cyclization of β-ammonio radicals, 5805

2-methylene-7-oxabicyclo[2.2.1]heptane and 6-methylene-8-oxabicyclo[3.2.1]octanes, cleavage reactions of leading to substituted methylenecyclohexenols and methylenecycloheptenediols, 1727

2-methyloxazolo[5,4-*b*]pyridine, isolation of fused azocines and bridged structures by photocycloadditions of acrylonitrile, 5783

(*R*)-(+)-7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid, precursor to substrates for the ring-opening metathesis polymerisation, synth by enzymatic kinetic resolution, 8853

7-oxanorbornene derivs, conversion into polypropionates: synth of fragments with four

contiguous chiral centres, 8957
oxazolo[4,5-*b*]pyridin-2(3*H*)-ones, functionalization at C-6, Heck, Suzuki and Stille reactions, 2409
perhydro-oxazolo[3,2-*a*]pyridines in asymmetric synth of 2-alkylpiperidines, 849
perhydropyrrolo[1,2-*a*]pyrazine-3,6-diones, ring-opening to γ-lactams for use as conformational constraints in peptides, 2471
perhydropyrrolo[1,2-*a*]imidazoles, synth by 1,3-dipolar cycloadditions to imidazolinium ylids, cleavage forming chiral pyrrolidines, 1707, 1711
3-phenyl-1,7a-dihydro-3*H*,5*H*-pyrrolo[1,2-*c*]oxazol-5-ones, conjugate addition of C nucleophiles, 4573
protected 2-thia-5-azabicyclo[2.2.1]heptan-3-ones, synth from 4-hydroxyproline as intermediates to carbapenem side chains, 2919
3-(3-pyridyl)-2-azabicyclo[2.2.2]octane,semi-rigid analogue of anabasine, synth from 3-pyridine bismethylcarbamate, 8841
pyrrolo[2,3-*d*]pyrimidine-2,4-diones, methylthiomethyl protection of N-1, 759
pyrrolo[1,2-*c*]pyrimidines, improved synth using TOSMIC, 4263
RP 73613, non-peptide NK1 antagonist, synth from 1,1-diphenyl acetone in 13 steps, 7743
sordidin(1-ethyl-3,5,7-trimethyl-2,8-dioxabicyclo-[3.2.1]octane), male-produced aggregation pheromone of the banana weevil *Cosmopolites sordidus*, synth and absolute configuration, 3741
3-substituted 1(3*H*)-isobenzofuranones (phthalides), asymmetric synth by reduction of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, 2205
3-(substituted amino)-perhydropyrrolo[2,1-*c*][1,4]-oxazin-4-ones, synth by intramolecular PET and use as chiral synthon for α-aminoacids, 3175
4,5,6,7-tetrahydroimidazo[4,5-*c*]pyridines, synth on solid support, 4865
1-vinyl-3-azabicyclo[3.1.0]hexanes, synth using allenyl-Pd(II) starter species in bis-cyclization-anion capture processes, 4609

Bilins
see Pigments

Biogenesis
muridienins 1 and 2, annonaceous acetogenins, biogenetic missing links, isolation from *Annona muricata*, 9301
(*Z*)-3-phenyl-2-β-D-glucopyranosyloxypropenoic acid, glucoside of phenylpyruvic acid, occurrence in *Aspalathus linearis*, biosynthetic significance, 5763

Biologically active compds
3-amino-1,4-benzodiazepin-2-ones, prep *via* azidation utilising triisopropylbenzenesulfonyl azide, 6685
(±)-(*Z*)-2-aminomethyl-1-phenylcyclopropane-*N,N*-diethylcarboxamide ((±)-milnacipran), antidepressant drug, synth of (+)- and (−)-milnaciprans, 641
anabasine, synth of 3-(3-pyridyl)-2-azabicyclo-[2.2.2]octane, semi-rigid analogue of anabasine from 3-pyridine bismethylcarbamate, 8841
(−)-anhydromacrosalhine-methinemacroline/sarpagine related indole alkaloid, synth by Pictet-Spengler reaction, subsequent coupling with (+)-pleiocarpamine yields the (−)-macrocarpamine alkaloid, 5033, 5037
15-*epi*-annonin I, Annonaceous acetogenins, synth *via* Sharpless epoxidation, 7001
anthelmintic, (±)-palasonin, *endo*-3,6-epoxy-1-methylhexahydrophthalic anhydride, synth, 1129
apicidin, cyclic tetrapeptide isolated from *Fusarium pallidoroseum* as inhibitor of apicomplexan histone deacetylase, antimalarial and antiparasitic activity, 8077
(+)-cassiol, antiulcerogenic compd , synth using diastereoselective intramolecular [3+2] dipolar cycloaddition reaction of a nitrile oxide, 9229
castavinols, glucoside polyphenol series from Bordeaux red wines, structures, 7739
cephalotaxidene, dimeric alkaloid with potential antileukemic activity from *Cephalotaxus harringtonia* var. *drupacea*, structure, 7053
chiral 3-substituted quinazoline-2,4-diones, solid phase synth starting from *N*-urethane anthranilamides, 7031
curacin A, antimitotic agent from Caribbean cyanobacterium *Lyngbya majuscula*, synth from geraniol, 4397
cis-decalins, constituents of the basic framework of many biologically active compds, synth based on radical ring expansion and cyclisation of α-iodomethylcyclopentanones, 6355
(±)-*trans*-10,11-dihydroxy-5,6,6a,7,8,12b-hexahydrobenzo[a]phenanthridine (dihydrexidine), dopamine D_1 agonist, synth from the acid chloride of *N*-tosyl-2'-phenethylglycine, 6971
disaccharide containing the sequence *O*-(2-deoxy-2-sulfamido-6-*O*-sulfo-α-D-glucopyranosyl)-(1→4)-2-*O*-sulfo-α-L-idopyranuronic acid found in heparin, synth and activity of, 1053
enantiomerically pure pyrrolidinones as endo-

thelin receptor antagonists, synth by [2+2] cycloaddition of an imine and an acid chloride followed by rearrangement of the resulting β-lactams, 4627
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
erinacines E-G, diterpene xylosides which stimulate nerve growth factor synth, from the mycelia of *Hericium erinaceum*, structures, 7399
forskolin, labdane diterpene isolated from the roots of *Coleus forskohlii*, total synth *via* a *trans* fused enone intermediate, 1015, 1019, 1023
hemibrevetoxin B, neurotoxin from *Gymnodium breve*, synth based on double rearrangement-ring expansion of a 6,6-membered ether to a 7,7-membered ether and cyclisation of a hydroxy styrylepoxide, 6365
hippospongic acid A, triterpenoic acid from marine sponge *Hippospongia* sp. which inhibits gastrulation of starfish embryos, 7765
homofascaplysin C, a 12*H*-pyrido[1,2-*a*:3,4-*b*']diindole, synth from 3-methylindole, 5203
8-hydroxy-1-(spiro-1'-indan)benzazepines, synth utilizing the thiomethyl group to activate the aromatic ring system, 7345
trans- and *cis*-3-hydroxy-2-(4-methoxyphenyl)-2,3-dihydro-1,5-benzothiazepin-4(5*H*)-one, microwave assisted synth, 6413
N^{ω}-hydroxy-L-arginine and L-citrulline, oxygenation of phenethylguanidoxime as chemical model for biological oxidation of, 4393
isomeric isoindoline dicarboxylic acid analogues, ET_A selective receptor antagonists, synth, 5065
(±)-licarin B and eupomatenoids-1 and -12, benzofuranoid neolignans, synth employing reactions of styrenes with *N*-phenylsulfonyl-1,4-benzoquinone monoimines, 6969
neuchromenin, microbial metabolite with neurotrophic activity from culture broth of *Eupenicillium javanicum* var. *meloforme* PF1181, isolation and structure elucidation, 6363
NSTX-3, polyamine amide spider toxin and glutamate receptor antagonist from *Nephila clavata* orb-web spider, total synth allowing putreanine moiety to be incorporated first, 551
23mer oligomer containing 8-oxo-7,8-dihydro-6-*O*-methyl-2'-deoxyguanosine, synth as a probe to study DNA-base excision by MutY enzyme, 9
3-oxoacyl-L-homoserinelactones and related bacterial autoinducers, prep by condensation of 3-oxohexanoic acid with L-homoserinelactone using hydroxybenzotriazole and dicyclohexylcarbodiimide, 1883
pancratistatin, an anticancer compd, synth of a diol from *myo*-inositol as an intermediate for synth of 7-deoxypancratistatin, 13
penaramides, Ca-blocking long-chain bis-amides of 2,6,10,15,19,23-hexaazatetracosane methylated and quaternized at some N atoms, synth of penaramide A, 225
penaresidins A and B, sphingosine-derived alkaloids with actomysin ATPase-activating activity, isolation from Okinawan sponge *Penares* sp., absolute stereochemistry of, 6775
phenazostatins A and B, phenazine antibiotics with neuronal cell protecting activity from culture broth of *Streptomyces* sp.833, structures, 8529
phomactin D, PAF antagonist marine diterpenoid from marine fungus *Phoma* sp., synth from L-ascorbic acid, 7107
polysialosides scaffolded onto *p*-t-butylcalix-[4]arene, synth, 5469
resveratrol (3,5,4'-trihydroxystilbene), isolation of a symmetrical bicyclo[6.6.0]tetradecane resveratrol tetramer from stalks of *Vitis vinifera* (Vitaceae), 4697
rhopaloic acid A, norsesterterpene from marine sponge *Rhopaloeides* sp., cytotoxic compd and inhibitor of gastrulation of starfish embryos, 2265
RP 73613, non-peptide NK1 antagonist, synth from 1,1-diphenyl acetone in 13 steps, 7743
see also Pharmacologically active compds
spirolides A to F from the digestive glands of shellfish, identification of the spirolide pharmacophore, 7671
sulfated bivalent glycopeptides, designed to probe selectin recognition, synth by HBTU-promoted coupling of a sulfated lactoside deriv to aspartic acid residues, 2907
L-(+)-swainsonine, dihydroxy-L-swainsonines and piperidine analogues of L-rhamnose as inhibitors of naringinase (L-rhamnosidase), synth, 8561, 8565, 8569
thrombin inhibitor L-370,518, synth from 4-aminocyclohexane carboxylic acid *via* α-hydroxy-β-lactam, 5045
see also Chemotherapy, Drugs, Hormones, Insecticides, Pharmacologically active compds, Pheromones, Phytoalexins, Toxins, Vaccines

Biomimetic reactions
(+)-pyripyropene, acyl-CoA:cholesterol transferase inhibitor, – synth, 6461
Biosynthesis
allosamizoline, amino-cyclitol derivative of chitinase inhibitor allosamidin, mechanism of cyclopentane ring formation, 5711
bicyclomycin, incorporation of leucine and isoleucine, hydroxylation and bridge formation mechanisms, 6935, corrig. 7329
bryostatins, *in vitro* study of their production by the marine bryozoan *Bugula neritina*, 8305
of cardenolide, role of malonyl-coenzyme A:21-hydroxypregnane 21-hydroxy-malonyltransferase from *Digitalis lanata* leaves in cardenolide biosynthesis, 2221
effect of enzymes from wild-type and mutant strains of *E. coli* on chorismate mutase rearrangement, 8675
of ergosterol, stereochemistry of hydrogen migration from C-24 to C-25 during biomethylation in biosynth, 1339
isopentenyl diphosphate – in *Streptomyces aerioiuvifer*, mevalonate and non-mevalonate pathways to menaquinone and naphterpin, ^{13}C-labelled glucose incorporation, 7979
sterol –, evidence for C-ring expansion step, 2709
tetronasin, synth and incorporation of di-, tri-, and tetra–ketide precursors, 3511, 3515, 3519
ubiquinone –, synth and enzymatic modification of biogenetic precursors, 2395
Bismuth and compds
triarylbismuth/$Cu(OAc)_2$ arylation of N-H bonds, promotion by triethylamine or pyridine, 9013
triphenylbismuth difluoride for phenylation of terminal acetylenes in the presence of catalytic amounts of CuCl, synth of phenyl substituted acetylenes, 4051
Bonds
density functional theory for calculation of – dissociation energies of substituted methanes, isodesmic determination of radical stabilization, 6473
Boron and compds
addition of diphenylphosphine-borane complex on an activated diene prepared from mannitol, synth of diastereomeric diphosphines, 4713
alkenyl boronic acids, reaction with halosuccinimides, synth of the corresponding alkenyl halides, 567
alkylboranes, cross-coupling reactions with carbapenem-2-yl triflates, synth of 2-alkyl substituted carbapenems, 2589
alkynyl(phenyl)iodonium tetrafluoroborates, reaction with tropolones, synth of 2-substituted furotropones, 5539
allylboronic acid for allylboration of β-hydroxy aldehydes and ketones, synth of *anti*-1,3-diols, 2181
aryl and heteroaryl boronic acids, microwave-assisted palladium-catalysed coupling of with iodo- and bromo-substituted benzoic acids anchored to TentaGel S RAM, 8219
arylboronic acids, Suzuki cross-coupling reaction with vinyl and aryl bromides, synth of four double bonds locked analogues of strobilurin A, 8213
borane reduction of ketones using oxazaphospholidine oxides as catalysts, 39
boron aldol reaction of α-halosubstituted thioacetates with silyl imines, enantio- and diastereoselective synth of aziridines, 3747
boron-derivatives of α-amino acids by hydroboration of vinylglycine and allylglycine with dicyclohexyl- or diisopinocampheylborane, 5111
boronium ion analogue of tropane ring system (NH^+-BH_2^--NH^+ replacing CH-NH_2^+-CH), synth and calculations, 2729
α-boryl radicals, intermolecular additions to olefins, allylation by allyl stannanes, synth of homoallylic boronate esters, 6847
carrier mixture of lipophilic boronic acid and bis(quaternary ammonium cation) for the transport of ribonucleoside monophosphates through liquid organic membranes, 6303
chiral bisterpenylhaloboranes, convenient synth using terpene, BX_3 and R_3SiH in Et_2O, main examples using 2-alkylapopinenes as terpenes, 8345
chiral dialkylboranes for reduction of vinylic epoxides, 7131
chiral tartrate-derived dioxaborolidine, use as a catalyst to effect enantioselective Diels-Alder reactions of bromoacrolein and cyclopentadiene, 2989
β-cyclodextrin borate, catalyst for oxygenation of alkenes by t-BuOOH, 3581
dicyclohexyl(hex-1-enyl)borane, use in synth of (4*Z*)-1,2,4,6-heptatetraenes, 4087
1,3-dienylborate salts, Diels-Alder reactions with activated dienophiles, synth of functionalised cyclic allylborates, 6699
diisopinocampheyl propargyl borane, synth and reaction with aldehydes, enantioselective synth of α-allenic alcohols, 4125

dipinacol diboronate, $[(Me_4C_2O_2)B]_2$, Pd-catalyzed coupling forming pinacol allylboronates, 6889
enol borinate aldol strategy for chiral synth of tetrahydropyran-containing C18-C30 core of phorboxazoles, 6449
enol diisopinocampheylborinates of methyl ketones,steric effects in reactions with aldehydes, 4911
hexacoordinate 2-carboranyl carbons and tetracoordinate methine carbons in organic molecules bearing *o*-carboranyl functionalities, differentiation between by extension of the APT ^{13}C NMR experiment, 6623
hydroboration of alkenes and alkynes with pinacolborane catalysed by transition metals, 3283
isopinocampheyl bromoborane, asymmetric hydroboration reagent for prochiral alkenes, 9021
(±)-isopinocampheyldichloroborane, *in situ* reduction-hydroboration reactions of, one-pot synth of unsymmetrical ketones *via* stepwise hydroboration of alkenes, 1763
lithio-bisdiethylaminophosphine borane complex, alkylation, synthetic equivalent of $Cl_2PBH_3^-$, synth of functionalized phosphines and diphosphines, 6099
lithium amidotrihydroborate, synth and use as a reducing agent, 3623
lithium cobalt-bisdicarbollide, catalyst for allylic substitution reactions, 8707
lithium *B*-[2-(2-dimethylaminoethyl)isoapocampheyl]-9-borabicyclo[3.3.1]nonyl hydride, chiral ketone reducing agent, 3791
lithium organoborates, nickel-catalysed coupling reactions with aryl mesylates and tosylates possessing an electron withdrawing group, 8531
nickel boride as catalyst for the *cis*-selective semihydrogenation of acetylenes, 1057
oxazaborolidine-catalyzed catecholborane for chiral reduction of 2-aroyl-pyridines and *N*-allylpyridinium triflates, and benzophenones, 5675
phenylboronic acids, nickel(0)-catalysed cross-coupling reaction of chloroarenes with –, synth of biaryls, 2993
reducible protecting groups for boronic acids, 6705
sodium triacyloxyborohydrides for reductive amination of substituted cyclohexenones, synth of protected axial amines, application to prep of 3-*endo*-tropanamine, 3977
sterically bulky boronic acid, Suzuki coupling with halopyridines in non-aqueous solvent, effect of base on acceleration of rate, 1043
Suzuki cross-coupling of arenediazonium tetrafluoroborates with arylboronic acids, 3857
tin-containing four-membered boracycle, 1,3,2,4-dithiastannaboretane deriv, synth and thermolysis of, generation of ArB=S, 5145
trialkylchlorosilanes with $B(OTf)_3$ form "supersilylating agents", potent reagents for allylsilane/aldehyde additions and Mukaiyama aldol reactions, 9401
triallylborane, addition of allyl-H to dihydropyridines, reductive 2,6-dialkylation of pyridines, 1317
tricyclohexylphosphine-trifluoromethanesulfonyl oxyborane and tricyclohexylphosphine-bis(trifluoromethanesulfonyloxy)-borane, synth and properties of, 503
trimethyl borate, reagent for cyclo-aromatization of propargyl β,β-di(alkylthio)vinyl benzyl alcohols, migration of an alkylthio group, 2817
see also Carboranes

Bridgehead chemistry
1,4-dimethoxybicyclo[2.2.2]oct-5-en-2-one,substitution of methoxy groups by alkyl by sequence involving bicyclo[3.2.1]octane intermediates; bridgehead alkylation in bicyclo[3.3.0]oct-5-en-3-ones, 7295
fused bicyclo[2.2.2]oct-2-ene-1,4-diol deriv, oxidative fragmentation to olefin and enedione, 8779
ketopinic acid, conversion of COOH into NH_2, NO_2, and t-butylnitroxyl, 7933
2-thioxo bridgehead compds, solvolysis of as compared with their 2-oxo homologues, evidence for marked π-conjugation in 2-thioxo carbocation, 2241

Bryostatins
C1-C9 segment of bryostatin, synth by kinetic resolution of racemic β-keto esters, 1767
marine macrolides with a polyacetate derived backbone, synth of the C(10)-C(16) segment of bryostatin from a *meso* oxabicyclic ketone, coupling with C(1)-C(9) model, 7695

Cadmium and compds
Cd metal for synth of βγ-unsaturated ketones from allylic bromides and acid chlorides, 9087
(diethylphosphonyl)difluoromethylcadmium halides, CuCl-promoted coupling with aryl iodides, 2745

Cage compds

adamantanes, tetracyclo[6.2.1.1^{3,6}.0^{2,7}]dodecane, tetrahydrodicyclopentadiene, aerobic oxidation using catalytic *N*-hydroxyphthalimide/Co(acac)$_2$, 4993

caged cyclopentylidenecarbene, synth as intermediate in reaction of 8-(dibromomethylene)-pentacyclo[4.4.0.0^{2,6}.0^{3,10}.0^{5,9}]undecane and -undecan-8-one with n-BuLi-THF and DAMP, 467

calix[4]arene derivs with highly strained structures by intramolecular reductive dimerisation of appropriate formyl groups in the presence of low-valent titanium agents, 645

– containing Si atoms and acetylenic groups, synth of 1,6-dimethyl- and -diphenyl-1,6-disilabicyclo[4.4.4]tetradeca-3,8,12-triyne, and related compds, 1179

diacetal trioxa-cage compd, synth by cyclisation and subsequent methylthio group rearrangement of *endo*-thioester substituted norbornenes, 8209

1,8-diazacyclotetradeca-4,11-diyne and 1,8-diazabicyclo[6.6.6]eicosa-4,11,17-triyne, synth from 1,6-dibromohex-3-yne, 479

photoactivated "caged" ATP, *p*-hydroxyphenacyl ATP, efficient and rapid release phototrigger for ATP, 6259

[6+6]-photocycloadditions in face to face benzo/pyridazino systems, approach to diazapagodanes, 4491

1,10,11,13-tetrachloro-12,12-dimethoxyhexacyclo[8.3.0.0^{2,9}.0^{4,7}.0^{5,13}.0^{6,11}]tridecane-3,8-dione and isomer, homosecohexaprismane derivs, synth, 8779

Calixarenes

1,3-alternate calix[4]arene with catechoylamide units on upper rim, *O*-tetrapropylated on lower, an exo-ditopic ligand, 4503

1,4-alternate calix[4]arene-bis-(hexaoxa-diaza-cryptand), and analogue doubly capped with diaza-18-crown-6 rings, synth, complexation studies, 8747

bifunctional receptors, calixarene tetracetic acid as cation and Zn-porphyrin as anion receptor, associated by barbituric acid–melamine H-bonding, 9341

2,2'-bithiazolyl-*p*-t-butylcalix[4]arene podands, synth and fluorescence properties, 5889

1,2-bridged calix[4]crowns in 1,2-alternate conformation, 3907

bridged calix[6]arenes bearing a bromide functionality in the cavity, structures, 4039

p-t-butylcalix[6]arenes, effect of removal of t-butyl groups from upper rim on extraction of Cs^+ and on Sr^{2+}/Na^+ selectivity, 7975

p-t-butyloxocalix[4]-, [5]-, and [6]arenes, synth *via* the corresponding CO-bridged acyclic analogues, solution studies, 5959

calix[4]-bis-crown, design of molecular "mappemondes" from –, 3325

calix[4]arene bridged by a cryptand unit and a crown ether chain in 1,3-alternate conformation, synth and complexation studies, 6315

calix[4]arene derivs with highly strained structures by intramolecular reductive dimerisation of appropriate formyl groups in the presence of low-valent titanium agents, 645

calix[4]arene podands and cryptands carrying nitroxyl spin labels, 8755

p-H-calix[4]arene, selective adamantylation of at the upper rim by reaction with functionally substituted 1-hydroxyadamantanes in trifluoroacetic acid, 543

calix[4]crown bearing an ionophoric cavity on the lower rim and two pyrene groups on the upper rim, synth, metal-induced conformational change and use for metal sensing and guest tweezing, 77

calix[4]crown ethers and chiral(1,3)- and (1,2)-calix[5]crown ethers, synth, 1493, 1497

calix[4]pyrrole-calix[4]arene linked by four CH_2O groups, cylindrical pseudo dimer, H-bonding and crystal structure, 7881

calix[4]resorcinarene, calix[5]resorcinarene and calix[6]resorcinarene, synth by acid-catalysed condensation of 2-propylresorcinol with formaldehyde diethyl acetal, 7383

calix[4]resorcinarene, functionalisation at the extraannular positions using a Mannich-type thiomethylation, 8547

calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units, synth in order to capture C_{60} in organic solution, 73

calix[8]arenes bis-bridged at the lower rim with an *ortho*- or *meta*-xylene unit, synth by reaction of 1,3,5,7-tetra-*O*-substituted calix[8]arenes with 1,2- or 1,3-bis(bromomethyl)benzene, 715

(2,7-)calix[3]indoles, cone-shaped, synth, x-ray, 241

H-bonding in calixarenes using ^{17}O NMR, 5797

linear koilate by fusion of *p*-phenylcalix[4]arenes with two silicon atoms, synth and inclusion with hexadiyne, 1401, 1409

monoformyl-tris-(*p*-Bu^t)calix[4]arene, reaction

with phosphonium salts of 6-bromomethyl-6'-methyl-2,2'-bipyridine and 2-chloromethylpyridine, synth of conjugated bipyridyl and pyridyl podands, 6311
monomethyl ether of monodeoxycalix[4]arene, C-H acidity effect of guest molecules on complexation with, 1435
NMR demonstration of chirality of calix[8]arenes with two crossing polyether chains, 7627
polysialosides scaffolded onto *p*-t-butylcalix[4]arene, synth, 5469
regioselective intramolecular bridging of calix[8]arenes using bis(bromomethyl)arenes, proton-DNMR of product double-bridged by *m*-xylylene units, 1621
regioselective synth of calix[8]crowns by direct alkylation of *p*-t-butylcalixarene, 3899
water-soluble chiral *N*-*p*-t-butylcalix[4]arene tetracarboxyloyl-L-alanine t-butyl ester, synth, 5841

Carbacyclins

stereoselectivity arising from charge interaction in synth of − analogues, 4141

Carbamates

acyl carbamate directing groups in synth of 2'-deoxy-5-ethyl-4'-thiouridine and D- and L-3-*O*-carbamoyl-2-deoxy-4-thioribosides, 1867, 1871
N-alkyl-− oligomers, solid-phase synth, 5653
α-arylvinyl−, tandem carbolithiation-α-alkylation and 1,2-Wittig rearrangements, 6061
O-t-butyl-*N*-(chloromethyl)-*N*-methyl carbamate as a source of the $MeNHCH_2^-$ synthon, 5597
by DMAP-catalysed reaction of amines with di-t-butyldicarbonate and alcohols, 5861
α-carbamoyloxy-β,β-difluoroethenyl phenyl sulfone, prep and reactivity of, 8233
pancreatic cholesterol esterase, inhibition by 4-nitrophenyl *N*-alkyl −, LFER study, 193
pseudoceratidine, antifouling spermidine deriv with two 4,5-dibromopyrrole-2-carbamyl units from marine sponge *Pseudoceratina purpurea*, structure, 1439
O-(α-zincovinyl) −, cross-coupling with aryl and heteroaryl halides and triflates, CH_3CO^- equivalent in synthesis, 6057

Carbapenems

2-alkenylcarbapenems, synth *via* the Heck reaction of carbapenem-2-yl triflate with monosubstituted alkenes, 2987
2-alkyl substituted carbapenems, synth *via* palladium-catalysed cross-coupling reaction of alkylboranes with carbapenem-2-yl triflates, 2589
1β-methylcarbapenems, synth based on cationic cyclisation of the acyliminium ion with a ketene dithioacetal terminator, 7811
α-methyl-4-oxo-3-(1-silyloxyethyl)azetidineacetic acid, − intermediate, synth, 4967
penems, carbapenems and related β-lactam antibiotics, synth of acetoxyazetidinone, a key intermediate to, from *N*-acryloyl-1,3-benzoxazinone, 5565
synth of protected 2-thia-5-azabicyclo[2.2.1]-heptan-3-ones as intermediates to carbapenem side chains, 2919
thienamycin and imipenem, β-lactam antibiotics, synth of a key intermediate by stereoselective two-direction elongation of asymmetrised bis-(hydroxymethyl)acetaldehyde, 521

Carbenes and carbenoids

caged cyclopentylidenecarbene, synth as intermediate in reaction of 8-(dibromomethylene)-pentacyclo[4.4.0.$0^{2,6}$.$0^{3,10}$.$0^{5,9}$]undecane and -undecan-8-one with n-BuLi-THF and DAMP, 467
ab initio calculations on heterocyclic 6π carbenes, 149
bis(dimethylaminophenyl) carbene radical cation, generation and stereospecific cyclopropanation of olefins, 4927
1-bromo/chloro-1-lithio-2-cyclohexyl-2-phenylethene, rearrangement with Ph migration, 5269
t-butylchlorocarbene-d_6, kinetic isotope effects for 1,3-CH(D) insertion reaction of, 279
2-t-butylcyclopropyl-3*H*-diazirine, thermal and photochemical decomposition, trapping by tetramethylethylene, formation of 3-t-butylcyclobutene not *via* carbene, 8337
carbene intermediate in formation of 2-pyridyl- and 2-quinolyl diacylamine by reaction of benzoyl chloride adducts of pyridine and quinoline *N*-oxides with carbonitriles, 69
chiral Rh_2(II)-catalyzed insertion of carbenoid into Si-H bond, 7631
conformationally-restricted2-alkenylcyclopropylcarbene-chromium complexes, synth and substituent effects on ring expansion reactions to 5-alkenyl-2-cyclopentenones, 1359
cyclopropanation of styrenes by methyl phenyldiazoacetate catalyzed by dirhodium prolinates, 4129, 4133
cyclopropyl carbenoids containing silicon in close proximity to the carbenoid center, reactions of, 579
cyclopropyl methyl carbene, formation of vinylcyclopropane; methylcyclobutene arises through

precursor to the carbene, 8333
5-diazotricyclo[5.1.0.0^{1,3}]hexan-4-one, a two-carbon bridged spiropentane, photo-Wolff rearrangement, 8285
dihydrofuranyl Fischer − complexes carrying thioether groups, oxidation to sulfoxides by methyltrioxorhenium/H_2O_2, 9385
generation of Ar_2C in TFE by photolysis of 1-(diarylmethyleneamino)-2,3-diphenylaziridines, carbene protonation, 1197
insertion of carbenoid from $RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl decomposition into Si-H, S-H, N-H and O-H bonds, 8815
kinetic isotope effect in 1,2-H shift from tertiary C to carbene centre, 1929
lithium carbenoid reagent RCH(OMEM)CFBrLi, generation and reaction with electrophiles, 7387
metallocarbenes, intramolecular reaction with a series of dioxalanes, synth of dioxolanes, 5053
metallocarbenoid approach to formation of spirocyclic ammonium ylids leading to the prep of medium-sized azacane rings, 2165
nucleophilic −, role of bis(thiazolin-2-ylidene)s as catalytic species in benzoin condensation, 5019
phenylchlorocarbene, kinetics of the reaction with 3-ethyl-1-azabicyclo[1.1.0]-butane, 5849
rhodium acylcarbenoid cycloaddition in synth (±)-aflatoxin B_2 precursor, 2391
rhodium-catalyzed CH insertion in chiral ester-diazoanilides, 145
N-substituted-3-azetidinylidenecarbenesgeneration by reaction of *N*-tosyl- and *N*-benzhydryl-azetidin-3-one with diethyl diazomethylphosphonate, 8101
synth of 4-, 5-, 6- and 7-membered lactones from acetylenic alcohols or their silyl ethers and Fischer carbene $(OC)_5Cr{=}C(OEt)Me$, 6165
tungsten dihydropyranylidene carbenes from tungsten carbonyl-induced cyclisation of alkynyl alcohols, 4675
Wolff rearrangement of methyl 5,5-diaryl-2-diazo-3-oxopent-4-enoates, formation of ketene and electrocyclization to 1-naphthol, 8277

Carbenium ions
calculation of transition states for methanol addition to pentadienyl cations, stereochemistry of intramolecular ether cyclization, 1257

Carbodiimides
2,3-dihydro-6*H*-pyrimido[2,1-*b*]quinazolin-4(1*H*)-ones, synth *via* − intermediates, 9071
from ureas using dimethylphosgeniminium chloride as a dehydrating agent, 7047
generation and incorporation into 3,4-dihydroquinazoline rings, 209
solid supported −, use in synth of Mosher amides, 7171

Carbohydrates
6*R*- and 6*S*- C6-*C*-methyl glucoses, activator and inactivator of glycogen synthase respectively, inhibition of glucokinase and/or glucose-6-phosphatase, 7155
β-acarbose, carba-tetrasaccharide, synth of 6"-hydroxy derivative as potential enzyme inhibitor, 2479
N-acetyl-D-glucosamine-derived *C*-*β*-D-glycosyl synthons - formaldehyde, nitroethane, nitroethene, 2341
N-acetylneuraminic acid, synth of a methylmercury-containing derivative, 7307
aldohexopyranose, conversion to ketohexopyranose benzyl derivs by Meerwein-Ponndorf-Oppenauer reaction induced by air-oxidised samarium diiodide, 5987
O-alkyl oximes of 5-*O*-tosyl aldopentose derivs, tandem reductive cyclization forming 1,3,4,5-tetrahydroxypiperidine derivs, 1547
allosamidins, pseudo-tri- and disaccharide chitinase inhibitors, synth of glucoallosamidin pseudo-disaccharide from cyclopentadienylthallium, 599
amidine-linkedpseudo-disaccharide,construction of by two routes, 5921
6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl group, synth from *N*-Boc bis-aziridine, 7717
2-amino-2-deoxy-α-D-C-glycopyranosides, synth by radical cyclisation of phenyl 2-*N*-allylamino-3,4,6-tri-*O*-benzyl-2-deoxy-α-D-1-seleno *galacto* and *gluco* pyranosides, 9193
bis-annulated pyranosides, synth by palladium(0)-catalysed cascade cyclisation on carbohydrate templates, 59
application of tri-*n*-butyltin cuprate in sugar chemistry, 3063
D-arabinohydroxamic acid 5-*O*-phosphate, synth as a transition state analogue inhibitor of glucose-6-phosphate isomerase, 1221
L-arabinose, conversion into branched sugar structure and precursor to canadensolide, 8641
aryl cyclohexyl ether as a disaccharide scaffold in E-selectin inhibitor synth, 3785
5-azido-5-deoxyaldopentose ketene dithioacetal bis(sulfones), intramolecular 1,3-dipolar cycloaddition of in the synth of imino sugar analogues, 3925

N-benzhydryl-glycolamide esters (OBg) as a protecting group, removal with tetrabutylammonium fluoride, 5191
4,6-benzylidene protected *N*-acetylated galactosamine β-glycosylated at the 3-position with peracetylated galactose, donor for the Thomsen-Freidenreich family of antigens, 595
bis-glycolaldehyde phosphate ester, intramolecular aldol reactions, tetrose cyclic phosphate synth, 5779
carbohydrate-derived acylsilanes, synth, and use in synth of *gem*-difluoro-*C*-disaccharides, 6113, 6117
carbon-nitrogen and carbon-sulfur linked pseudodisaccharides incorporating a hydroxylated pyrrolidine type glucosidase inhibitor, synth by nucleophilic opening of D-mannitol derived bisaziridines, 5095
(+)-castanospermine, polyhydroxylated alkaloid from *Castanospermum australe* and *Alexa leiopetala*, formal synth from tetrabenzylgluconolactam, 547
cleavage of hexuronic and penturonic acids by $PhI(OAc)_2/I_2$, synth of alduronic acid lactones, 1687
CMP-NeuNAc analogues having a glycosyl phosphonate structure, synth by nucleophilic substitution of sialyl phosphite with dimethyl trimethylsilyl phosphite followed by Mitsunobu condensation, 1451
Cr(II) complexes of glucose derivs, formation of glycals, 1293
conversion of 5-CH_2OH in uridine into a glycine moiety, synth of uracil polyoxin C, 163
conversion of hexoses into methylcyclopentane triols and tetrols using Grob cleavage and SmI_2 cyclization, 1305
core-fucosylated biantennary octasaccharide, synth, 6527
cyclodextrins *via* the per-6-bromo-6-deoxy-CD, perfacial functionalisation of α, β and γCD employing a Vilsmeier-Haack reagent, 4647
3-*O*-cyclohexenyl carbohydrate nitrones, diastereoselective synth of 9-amino-2,3,8-trihydroxyperhydrofuro[3,2-*b*][1]benzopyran derivs, 7635
cyclokojibiose, member of the cyclic oligosaccharides, synth by intramolecular cyclisation of a fully protected kojibiosyl trichloroacetimidate, 3627
cyclophellitol, carbasugar deriv isolated from mushroom *Phellinus* sp., synth of (±)- and (1*R*, 6*S*)-cyclophellitol from 7-oxabicyclo[2.2.1]hept-5-ene-2-*endo*-carboxylic acid, 3043
1-deoxy-1-*C*-(*p*-aniline)-β-D-ribofuranose, synth from 1-bromo-4-lithiobenzene and D-ribono-1,4-lactone, incorporation into ribozymes using the solid phase phosphoramidite procedure, 6973
2-deoxy-2-fluoropentoses, synth from 2-deoxy-2-fluoro-γ-aldonolactones, 4345
1-deoxy-azasugars, asymmetric synth by kinetic resolution of an α-furfurylamine deriv, synth of deoxymannojirimycin, 1461
$6^A,6^D$-di-*O*-(*p,p'*-biphenyldisulfonyl)-β-cyclodextrin, specific cleavage of the glucose-wall of by Taka-amylase A, synth of a cyclic compds composed of glucoses and biphenyl, 4035
4,5-di-*O*-tosyl Amadori product, dehydration of, formation of 3-alkylamino-2-hydroxy-4-hydroxymethyl-2-cyclopenten-1-one (cypentodine), 4667
dialkynes with orthogonal protection by $SiMe_3$ and $GeMe_3$ groups, application to disaccharides, 7959
dideoxycarbocyclic sugars, synth by treatment of olefinic epoxy alcohol with diethylaluminium fluoride, synth of 2-hydroxymethyl-4-methylenecyclohexanol, 3
differentially protected anhydroalditols, synth by stereoselective hydride addition to endocyclic 1,2-anhydrosugars, 961
disaccharide synth *via* glycosylation by activation of glycosyl phosphates through *in situ* conversion into glycosyl iodides, 3837
disaccharides by glycosylation of sulfinylglycosides using the TfOH/TEP system, 1477
α,α-disaccharides, formation by dimerisation of free pyranose and furanose sugars promoted by molecular sieves, 6279
β-D-(1→3)-C-linked 1,5,6-trideoxy-1,5-iminogalactoside of D-altrose derivs, synth by cross-aldolisation of 2,6,7-trideoxy-2,6-imino-D-glycero-L-mannose and a 7-oxanorbornanone, 483
D-galactopyranose, conversion to 1,6,8-trioxadispiro[4.1.5.3]pentadecanes, 6021
Gal(β1-3)Gal(β1-4)Xyl(β)-L-Ser and Gal(β1-3)Gal(β1-4)Xyl(β)-MU, chemoenzymatic synth by the use of β-D-galactosidase, 6763
D-glucose based dienes, cycloaddition with *in-situ* generated 2-methoxycarbonyl-*p*-benzoquinone, synth of cycloadducts which could be transformed into functionalised decalins, 4055
D-glucose, starting material for isoprostane $IPF_{2\alpha}$-I synth, 4849

glycopeptide analogue of the immunodominant T cell epitope on type II collagen, solid phase synth, use of acid labile protective groups for carbohydrate moieties in solid phase synth of glycopeptides, 3011
glycopeptides containing *O*-α-fucosyl-(1*R*,2*R*)-2-aminocyclohexanol, design and synth as sialyl Lewis X mimetics, 5427
glycosylation of several template linked monosaccharides leading to macrocyclic disaccharides, effect of the anchoring sites of the spacer and the reaction temperature on regio- and stereo-selectivity, 1105
halosuccinimide reaction with alkenyl boronic acids, synth of the corresponding alkenyl halides, 567
HBTU-promoted coupling of a sulfated lactoside deriv to aspartic acid residues, synth of sulfated bivalent glycopeptides designed to probe selectin recognition, 2907
heterochiral dodecadeoxynucleotides containing an unnatural L-enantiomer of D-deoxyribose, synth and investigation of their thermodynamic stability for duplex formation, 5551
hexasaccharide containing lactosamine unit, synth using glycosyl trichloroacetates as glycosyl donors, 8549
homologous series of cellulose analogues (3-*O*-benzyl-2,6-di-*O*-pivaloyl derivs and 2,3,6-tri-*O*-acetyl derivs), synth by β-glycosylation and deprotection, 9215
D-*arabino*-hydroxamic acid and D-threonohydroxamic acid, inhibitors of D-xylose isomerases, synth by from D-arabinose, 2237
α-hydroxydichloromethyl compds, synth of branched (aldehydo-) sugars by hydrolysis both with retention and inversion of configuration, 2799
kakelokelose, sulfated mannose polysaccharide from tunicate *Didemnum molle*, 1979
long chain branched −, synth using 7-oxabicyclo-[2.2.1]heptene strategy, 2023
L-mannonic γ-lactone, elaboration into C1-C13 segment of halichondrin B, 8643
methyl 2-thioglycoside of *N*-glycolylneuraminic acid, synth from *N*-acetylneuraminic acid, 2613
η^6-(4'-methylbenzyl 2-*O*-acryloyl-3,4-*O*-isopropylidene-β-L-arabinopyranoside)tricarbonyl chromium(0), Diels-Alder reactions of, 3713
exo-methylene carbohydrate enynic substrates, Pauson-Khand reaction of, unexpected formation of fused "[4.1.0]bicycloheptene-pyranose" tricyclic product, 1489
model disaccharide containing the sequence *O*-(2-deoxy-2-sulfamido-6-*O*-sulfo-α-D-glucopyranosyl)-(1→4)-2-*O*-sulfo-α-L-idopyranuronic acid, synth and activity of, 1053
moenomycins, antibiotics that inhibit the transglycosylation step of peptidoglycan biosynth, use of two new C_9 protecting groups in synth of analogues of, 367
neohancosides A and B, monoterpene diglycosides from *Cynanchum hancockianum*, synth using fluoride as a glycosyl donor, 4015
non-glycosidically linked oligosaccharides, synth by reaction of dialkylstannylene acetals derived from carbohydrates with diacyl chlorides and disulfonyl chlorides in the presence of tertiary amines, 991
non-protected thymidine or carbohydrates, phosphorylation at the primary alcohol of by hydrogen phosphonate, synth of 6-(mannopyranosyl), 6-(glucopyranosyl) or 5'-(thymidinyl)-phosphodiesters, 5123
oligonucleotide analogue containing a glucose-derived conformation-restricted ribose moiety and 2',5'-formacetal linkages, synth and hybridization properties, 941
oligosaccharides, debenzylation of using ferric chloride, 5477
oligosaccharides, *p*-nitrophenyl group for anomeric protection of −, selective oxidative cleavage *via p*-acetamidophenyl glycosides, 3343
oligosaccharides, polymer-supported synth of, use of dibutylboron triflate to promote glycosylations with glycosyl trichloroacetimidates, 6985
oligosaccharides, solid-phase synth on polyethylene glycol/polystyrene copolymer, 5007
oligosaccharides, trichloroacetimidates as sugar donors in solid phase oligosaccharide synth, 3989
peptidoglycan monomers, solid phase synth by coupling of the corresponding lipid-bearing glycocarboxylic acids to resin bound peptides, 8097
phenylsulfonyl-activated unsaturated carbohydrate derivs, palladium-catalysed [3+2]-cycloaddition reactions of, 2303, 2307
phoeniceroside (2,2-bis-(5-methyl-4-(*O*-β-D-glucopyranosyl)-3(2*H*)-furanone)-propane)isolated from *Juniperus phoenicea*, structure, 2955
phosphonic acid analogue of KDO, synth, 1595
piperidine analogues of L-rhamnose as inhibitors of naringinase (L-rhamnosidase), synth, 8561, 8565, 8569

raney nickel catalysed hydrogen-deuterium exchange in a model monosaccharide, investigation of solvent effects, 6231
D-ribofuranose, reaction with aminoethanethiol followed by cyclisation, synth of castanospermine and australine analogues, 49
D-[5-^{13}C]ribose, synth from D-ribose and its conversion to [5'-^{13}C]nucleosides, 7757
spirocyclopropane sugars, synth and application to formation of tertiary chiral centres: route to 2,2'-dialkylated pyranose subunit of lasonolide A, 8617
stereochemistry of glycosides when the C3 and C4 hydroxyls are protected by an extremely bulky group, 663
stereoselective ring contraction of a pyranosylated indolocarbazole, production of the K252a carbohydrate moiety, biosynthetic link between K252a and staurosporine, 3929
stereospecific synth of Kdo structure modelled on proposed Kdo8P synthase function, 3545
substituted glycals, synth from glycosyl bromides using $(Cp_2TiCl)_2$, 4357
sulfated β-1,6-linked oligosaccharide mimetic, potent inhibitor of HIV replication, synth, 2549
– template for remote asymmetric induction in propionate alkylation, 2061
tetrasaccharide of extended blood group B determinant, glycosylation strategy in synth, 4551
thioglycosides of D-fructofuranose, synth from D-arabinose, glycosylation of to give α-fructofuranosides, 7413
thiolinked sialyl Lewis X analogue from neuraminic acid, D-galactose and L-fucose, 1389
(3,4,6)tri- and (3,4)-di-*O*-benzyl-2-deoxy-L-glucose by heterocycloaddition of (*E*)-benzyloxymethylene pyruvate with *O*-vinyl mandelic ester, 4007
1,3,5-tri-*O*-benzoyl-2-deoxy-2-fluoro-α-D-arabinofuranose by fluorination of 1,3,5-tri-*O*-benzoyl-2-imidazolesulfonyl-α-Δ-ribofuranose, 17
O-tributylstannylmethyl sugar derivs, building blocks for tethered reactions, 4211
2-(trimethylsilyl)ethyl2-acetamido-2-deoxy-3,4,6-tri-*O*-acetyl-β-D-glucopyranoside, prep from 2-acetamido-2-deoxy-1,3,4,6-tetra-*O*-acetyl-β-D-glucopyranose, 609
two blood group antigens, H-type 2 and Lewis X trisaccahrides containing 5-thio-L-fucose instead of L-fucose, synth from 1,6-anhydro-2-azido-2-deoxy-lactose, 1809
two-step glycosylation involving linking two sugars using carbonate as connector and, the removal of carbon dioxide to form a glycosidic bond, 2267
2,3-unsaturated sugar derivs by reduction of 3-*O*-acetylated sugar 1-nitro-1-alkenes with zinc and acetic acid, 415
unsaturated sugars, cyclopropanation with ethyl diazoacetate and metal catalyst, prep of ester-substituted 1,2-*C*-methylene carbohydrates, ring-opening provides C-2 branched glycosyl bromides, 2533, corrig. 3217
xylulose in synth of syringolide 2, elicitor metabolite of *Pseudomonas syringae* 3557
see also Amino sugars, Cyclodextrins, Glycals, Glycolipids, Glycosides

Carbohydrate analogues
1,6-C-linked disaccharide by SmI_2 reductive coupling of aldehyde with glycosyl chloride, 4903

Carbohydrate mimetics
C-fucopeptides, sialyl Lewis X antagonists, synth of lipid-attached molecules to enhance activity, 9033
C-mannose derivatives, sialyl Lewis X mimics, synth, 9037
carbopeptoids with 1,2'-CO-NH links between sugar residues, 1575
(3*S*,4*S*)-3,4-dihydroxy-3-hydroxymethylpyrrolidine, synth of a ribofuranosyl cation mimic, 2097
C-disaccharides by dimerization of 3-*O*-acetyl glucals brought about by $AcClO_4$ 9093
C-disaccharides with CH=CH and CH_2CH_2 inter-ring links, synth by Wittig reactions, 7587

Carbonates
allylic –, Pd(0)-catalyzed cross-coupling with organo-Sn reagents, 6587
cyclic carbonates by activation of diols, azide opening of the carbonates and hydrogenation of the resulting azidoalcohols, synth of enantiopure aminoalcohols, 3219

Carbonyl compds
allylation of – with allyl bromide mediated by a vanadium(II) complex, 7083
(2-aminohomodiene)tricarbonyliron(0) complexes by deprotonation and rearrangement of (1-heterodiene)tricarbonyliron(0) complexes, 691
aza-Wittig reaction with *N*-vinylic phosphazenes, synth of dihydropyridines and pyridines, 6379
Boc (t-butoxycarbonyl) protecting group, removal from nitrogen atoms in conjugation with an aromatic or carbonyl group, 1471
N^{α}-t-butoxycarbonyl group, deprotection using

silicon tetrachloride and phenol, 5989
by unmasking of thioacetals derived from aldehydes and ketones by exposure to a solution of nitrogen oxides in dichloromethane, 1897
condensation of – on malononitrile in dry media under microwave irradiation and catalysed by silica gel, 1113
diazocarbonyl compds, decomposition of catalysed by dirhodium(II) carboxylates, 107
1,3-dicarbonyl compds, alkylation with a trimethylenemethane zwitterion equivalent leading to [3+2] annulation, 471
ene reactions of – catalysed by diiodosamarium, 5195
fused cyclobutenomaleimides, reactive dienophiles for molrac construction by cycloaddition with cyclic dienes, 3773
Leuckart reductive amination of –, enhancement of by microwave heating, 8177
nucleophilic addition of lithiated t-butylphenylphosphine oxide to –, synth of functionalised tertiary *P*-chiral phosphine oxides, 4729
reaction with 1,3-dibromopropene mediated by indium in water, synth of bis-allylation products, 295
reaction with 2,2-di(ethoxy)vinyllithium, synth of β-hydroxy esters, conjugated esters or hydroxy ketene acetals, 5507
switching regiocontrol in 1-aryl-substituted cyclohexadienyliron complexes in a synth of lycoramine alkaloid, 6283
1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldi oxy arene systems, stereo- and regioselective ether-ring opening of with boron tribromide, 3651
tricarbonyl(η^4-cycloheptadienyl)iron tetrafluoroborate, sequential additions of nucleophiles to, synth of bridged bicyclo[4.2.1]nonane and tricyclo[5.2.1.$0^{4,8}$]decane skeletons, 7361
tricarbonyl[η^6-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium, cyclisation of, synth of isoindoline, 3307
tricarbonyl(triene)iron complexes, dihydroxylation/glycol cleavage of, synth of (dienal) $Fe(CO)_3$ complexes, 423
see also Aldehydes, Ketones, and other relevant compound classes. For metal carbonyls *see* Chromium, Iron, Manganese, Tungsten, and compds

Carbonylation
Pd-catalyzed asymmetric alkoxy– of *o*-chloroanisole-$Cr(CO)_3$, 167
Pd-mediated alkoxycarbonylation of 2-chloroquinolines, 8281
palladium(II)-catalysed – of organomercurials in the presence of *p*-benzoquinone, synth of *cis*- and *trans*-fused lactones, 1125
ring expansion of 3,6-dihydro-2*H*-1,2-oxazines to 4,7-dihydro-1,3-oxazepin-2(3*H*)-ones by $Co_2(CO)_8$/CO at 1000 psi, 2713

Carboranes
o-carborane derivs by reaction of *o*-carboranyllithium reagents with functionalised alkyl halides, 3383
[8]-*m*-carboranophane, [8], [9] and [10]dithia-*m*-carboranophane and [8,8], [9,9] and [10,10]-tetrathiadicarboranophanes, synth and structure, 7221
carboranyl spermidines and spermines, synth as potential BNCT agents, 9283
containing Gd-DTPA complex, synth using all-carboxylate free DTPA derivs, 539
1,2-didehydro-*o*-carborane, generation and trapping from the benzene adduct, synth of 1,4-naphthalene adduct, 7217
para- and *nido*-carboranylpropyl ethidium analogues, synth for neutron capture therapy, 6905

Carboxylation
of saturated hydrocarbons in Gif systems, 1555

Carboxylic acids and derivs
3-aminopyrazine-2-carboxylic acid and α-amino acid esters, condensation and conversion to iminophosphorane for use in synth of pyrazino-[2,3-*e*][1,4]diazepine derivs by aza-Wittig, 81
(*S*)-3-(benzyloxy)-4-cyanobutanoic acid, synth by hydrolysis of 3-benzyloxyglutaronitrile which is transformed to (*R*)-4-hydroxy-5-cyanopentene, precursor of lactone moiety of mevinic acids, 6001
2-(3-bromoisonicotinoyl)indole-3-carboxylic acid from reaction of *N*-benzylindole-2,3-dicarboxylic anhydride with (3-bromo-4-pyridyl)triisopropoxytitanium, subsequent conversion to ellipticine, 7753
α-chiral carboxylic acids, absolute configuration by ^1H and ^{13}C NMR spectroscopy using axially chiral 1,1'-binaphthalene-8,8'-diol as derivatising reagent, 4737
dialkyl malonate esters, reaction with P_2S_5/S_8 with 2-mercaptobenzothiazole/ZnO as catalyst, synth of 5-alkylthio-3*H*-1,2-dithiole-3-thiones, 2137
diethyl aminomalonate, reaction with ethyl-(ethoxymethylene)cyanoacetate, synth of 2-amino-1,5-dihydro-4*H*-pyrrolo[3,2-*d*]-pyrimidin

-4-one (9-deazaguanine), 4339
methyl (4*R*,5*R*)-4,5-dihydro-5,5-(disubstituted)-4-oxazolecarboxylates, synth by diastereoselective aldol reactions of prochiral ketones with methyl isocyanoacetate, 7845
3,3,3-trifluoropropanoic acid, synth and subsequent Vilsmeier-Haack reaction to yield the β-trifluoromethyl vinamidinium salt 1,1,5,5-tetramethyl-1,5-diaza-3-(trifluoromethyl)-1,3-pentadienium chloride, 1829
vinyl cyclopropane carboxylic acids, (*cis*)-chrysanthemic acid, synth from 2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, 7119, 7123
acrylate esters from monobenzylated isosorbide or isomannide, Diels-Alder reactions of, 7023
alkane-1,n-diol bis-acetates, lipase catalysed hydrolysis into the corresponding monoacetate, 625
3-alkyl-4-hydroxy-2-butenyl acetate, prep by lipase AL (Meito)-catalysed hydrolysis of the diacetate of (*E*)-2-substituted-2-butene-1,4-diol, 91
alkynylogous and vinylogous glyoxylates, asymmetric carbonyl-ene reaction with catalysed by a binaphthol-derived chiral titanium complex, application to the synth of chiral isocarbacyclin analogues, 8515
Arndt-Eistert reaction of – under ultrasonic radiation, 1781
aromatic carboxylic acids, treatment with alcohols in the presence of thionyl chloride, synth of the corresponding esters, 6375
aziridine-1,2-dicarboxylates, synth by aziridination of α,β-unsaturated esters by (ethoxycarbonyl)nitrene, 3777
aziridine-2-carboxylates, synth by reaction of hexahydro-1,3,5-triazines with alkyldiazoacetates in the presence of tin(IV) chloride, 7069
benzene derivs metasubstituted with ω,ω'-difunctionalised six-carbon chains, synth by double Wittig reaction of 4-carboxybutylidene triphenylphosphorane, 1393
(*S*)-*N*-t-butoxycarbonylaziridine-2-carboxylate derivs, synth and reaction with copper 'catalysed' Grignard reagents to yield protected α-amino acids, 3761
carboxylation of saturated hydrocarbons in Gif systems, 1555
γ-chiral and γ,δ-dichiral α,β-unsaturated acid derivs, synth by allylation/Cope rearrangement sequence and asymmetric aldol/oxy-Cope strategy respectively, 8895, 8899
7-chloro-1-cyclopropyl-6-fluoro-4-oxo-1,2-dihydroquinoline-3-carboxylic acid, reaction with piperazine, synth of ciprofloxacin and norfloxacin antibiotics, 6785
chlorocinnamyllithium, synth by deprotonation of *trans*-cinnamyl chloride with lithium diisopropylamide, subsequent reaction with carbonyl compds forms styryl oxiranes, 4777, 4781
conversion to 1,1-difluoroolefins *via* α,α-difluorothioethers, 3223
crotonamide dianion, synth of dilithiated (*E*)-*N*-isobutyl-4-tosyl-2-butenamide for the regiospecific γ-functionalisation of, 4787
cyclo-2,3-diphospho-D-glycerate, synth from D-mannitol involving cyclisation of methyl 2,3-diphospho-D-glycerate using dicyclohexylcarbodiimide, 355
cycloalkylideneacetates, fluorinative ring expansion to give β,β-difluorocycloalkanecarboxylic esters, 8511
trans-1,2-cyclohexanedicarboxylic acid derivs as pH-triggers for conformationally controlled crowns, 3981
cyclopropene carboxylic acid allylic esters, intramolecular photocycloaddition of, formation of 5-oxaspiro[2,4]hept-4-ones, 8879
α,ω-dicarboxylic acids, monoesterification of catalysed by ion-exchange resins, 6733
meso-dicarboxylic anhydrides, diastereoselective ring-opening with Li- and Zn-complexes generated from sterically congested chiral *N*-sulfonylaminoalcohols, reversal of stereoselection, 9237
dicarboxylic ester-tethered trienes, synth and intramolecular Diels-Alder reactions of, formation of medium-ring diolides, 535
diethylenetriaminepentaacetic acid, synth of all-carboxylate free DTPA derivs by palladium catalysed reaction of allylic carbonates with a mono-ethoxycarbonyl adduct, 539
4*S*(2*E*,4*R*,6*R*)-4,6-dimethyl-2-octenoic acid (aside chain of zaragozic acid A), synth involving enantioselective aldol reaction followed by hydrogenation, 1331
diphenazithionin composed of two phenazinecarboxylic acids connected by a sulfur linkage, isolation from *Streptomyces griseus*, structure and inhibitory activity of lipid peroxidation, 9227
direct C-acylation of phenols by acids using catalytic $Hf(OTf)_4$, 4183

in directed metalation reactions; intermolecular competition of the carboxylic acid group and various substituents, 8175
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, complexation with cyclodextrins, no distinction between host and guest, 7433
4,4-disubstituted conjugated allenecarboxylates, prep by Horner-Wadsworth-Emmons reaction with a phosphonoacetate reagent, 3735
EDTA and DTPA analogues of dipalmitoylphosphatidylethanolamine as lipophilic chelating agents for metal labelling of LDL, 4685
1-ethoxyvinyl acetate as a novel, highly reactive acyl donor for enzymatic resolution of alcohols, 7369
ethyl 2,2-dimethoxycyclopropane-1-carboxylates and methyl 2,2,6,6-tetramethoxybicyclo[2.2.0]-hexane-1-carboxylates, oxidative scission by RuO_4, 527
ethyl (*E*) and (*Z*)-3-aryl-3-phenylpropenoates, synth by reaction of ethyl cinnamate with *para*-substituted aryl iodides and iodobenzene respectively under Jeffery-Larock conditions, 7449
1- and 1,1'-ferrocenepropanoic acids, asymmetric synthesis from ferrocenyl ketones, 7861
cis-2-fluoro-cyclopropane-1-carboxylic acid, synth from t-butyl acrylate and chloromethyl phenyl sulfoxide, 8507
from hydrocarbons by treatment with iron pentacarbonyl and hydrogen peroxide in pyridine-acetic acid, 8137
glycine-derived diazo acetoacetamide, Rh(II)-catalysed decomposition of, ligand-dependent site selectivity in, 6981
halofluorobenzoic acids *via* regioselective lithiation of chloro- and bromo-fluoroarenes, 6551
HMGA (3-hydroxy-3-methylglutaric acid) esters and amides, synth of (*R*)- and (*S*)-β-carboxymethyl-β-methyl-β-lactones as reagents for prep of, 2275
homochiral 2-alkylated carboxylic acids, conversion to (3*R*)-[4,4,4-D_3]-L-valine, [^{15}N]-L-isoleucine and [^{15}N]-*allo*-isoleucine, 1517
β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, synth by $Sc(OTf)_3$-catalysed aldol reactions of polymer-supported silyl enol ethers, 5569
α-hydroxy carboxylic acids, synthby reduction of α-ketoestersbearing5(*N*-methylbenzoylamino)-2,2,6,6-tetramethylheptan-3-ol as a chiral auxiliary, 1863
6-hydroxyindole-3-acetic acid, the aromatic subunit of NPTX-1–6, synth, 7099
1-(hydroxymethyl)cyclopropanecarboxylic acid by reaction of α-bromocyclobutanecarboxylate with potassium hydroxide or carbonate, 623
imidazo-2-yl and pyid-2-ylpyruvic acids, decarbonylation of by sodium perborate at room temperature, synth of the corresponding acetic acids, 1901
bis(iminodiacetic acid)-appended myoglobin, synth by cofactor reconstruction method, 9233
indoline 2,2-biscarboxylates, synth employing a tandem bis-alkylation strategy to cyclize the indoline heteroring from *N*-trifluoroacetamide and diethyl bromomalonate, 6965
isomeric isoindoline dicarboxylic acid analogues, ET_A selective receptor antagonists, synth, 5065
lipid-bearing glycocarboxylic acids, coupling to resin bound peptides, solid-phase synth of peptidoglycan monomers, 8097
liposomised *m*-chloroperbenzoic acid for enantioselective epoxidation of functionalised and unfunctionalised olefins, 4751
lurlene, sex pheromone of green flagellate *Chlamydomonas allensworthii*, synth, 1821
D-mandelic acid, starting material for synth of (+)-goniofufurone and goniobutenolides A and B *via* β-hydroxy sulfone, 4373
3-mercaptopicolinic acid, inhibitor of gluconeogenesis, synth from 3-bromo-2-cyanopyridine, 3617
methoxy-(2-naphthyl)acetic acid as chiral anisotropic reagent in determination of absolute configuration of yessotoxin by NMR, 7087
2-methyl *N*-(*p*-toluenesulfinyl)aziridine-2-carboxylic acid, ring-opening to give α-methylphenylalanine and α-methyl-β-phenylserine, 5473
methyl 7,8,11,12-tetradehydroretinoate, synth from 1-ethynyl-2,6,6-trimethylcyclohexene, 3971
1-methyl-1-(*p*-tolyl)acetic acid, synth by photorearrangement of α-halo aryl ketone, key step in synth of α-cuparenone terpene, 2629
γ-methyl-γ,δ-pentenoic acids, iodine catalysed lactonisation, synth of γ,γ-dimethyl-γ-butyrolactones, 1441
N-sulfinylaziridine 2-carboxylic acid, ring-opening of, asymmetric synth of D-*erythro*- and L-*threo*-sphingosine, 4349
(*R*)-(+)-7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid, precursor to substrates for the ring-opening metathesis polymerisation, synth by enzymatic kinetic resolution, 8853

γ-oxo-α,β-unsaturated carboxylic acids, intermediates to (+)-patulolide A and (−)-pyrenophorin, synth from 2-substituted furans, 4385
anti-3-oxotricyclo[2.2.1.0]heptane-7-carboxylic acid, resolution by *Candida antarctica* lipase A, 3975
phenyl salicylates, base-promoted reaction with aliphatic aldehydes, synth of the corresponding acetals, 3755
α-phenylseleno-γ-keto esters and γ-butyrolactones, synth by reaction of α-chloro-α-phenylselenoesters with silyl enol ethers, 9173
photoactivated "caged" ATP, *p*-hydroxyphenacyl ATP, efficient and rapid release phototrigger for ATP, 6259
polypropionates, synth from 7-oxanorbornene derivs: synth of fragments with four contiguous chiral centres, 8957
silicon substituted carbonate and acetate in palladium-catalysed nucleophilic substitutions, 8483
2-silyloxycyclopentenecarboxylates, addition of Grignard reagents to, synth of 5-substituted-2-hydroxycyclopentanecarboxylates after desilylation, 6323
3-substituted pipecolic acid methyl esters, synth from 3-hydroxy-2-pyridine carboxylic acid, 459, corrig. 2315
1,2,3,4-tetrahydroisoquinoline-7-carboxylate, synth *via* intramolecular cyclisation of *N*-trifluoroacylated phenethylamines, 5453
2-(2,3,7,13-tetrahydroxyoctadecanoylamino)-ethanesulfonic acid, framework of taurolipid B isolated from fresh-water protozoan *Tetrahymena thermophila*, absolute configuration, 6347
thiomalic acid, conversion to DL-isocysteine using hexafluoroacetone as protecting and activating agent, 8159
trans-anti-cis-decahydro-*as*-indacene, synth by Claisen ring contraction of a 16-membered macrolactone followed by Diels-Alder reaction of the resulting (*E,E,E*)-cyclodeca1,6,8-triene, 8065
triphenylene-*o*-dicarboxylic derivs by reaction of 1-methoxy-1*H*-phenanthro[9,10-*c*][1,2]oxazine with dienophiles, 1097
Tröger's base analogues with dicarboxy functionality, synth, 5791
unprotected olefinic carboxylic acids, direct epoxidation of using HOF.CH_3CN, 531
αβ-unsaturated aromatic carboxylic acids, manganese(II) acetate catalysed reactions with NBS, route to haloalkenes and α-(dibromomethyl)benzenemethanols, 2623
αβ-unsaturated carboxylic acids, intramolecular hydroxymethylation *via* radical cyclization of bromomethyl dimethyl silyl esters, 8363
unusual esterification of − by alkyl (triphenylphosphoranylidene)acetates, 1233
urethane *N*-carboxyanhydrides, reaction with lithium enolate of ethyl acetate, synth of *N*-protected γ-amino-β-keto-esters, 8489
zinc pyropheophorbide *a* methyl ester, oxidative silylation of with chlorotrimethylsilane, formation of a novel oxygen-bridged dimer, 6395
see also Amides, Esters, and other relevant compound classes

Carboxylic anhydrides
(±)-palasonin, *endo*-3,6-epoxy-1-methylhexahydrophthalic anhydride, anthelmintic, synth, 1129

Carcinogenesis
3,7β,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene, metabolite of benzo[*a*]-pyrene, synth, 1527

Carcinogens
syn- and *anti*- 3,4-epoxy-1,2-diols of triphenylene, 8267

Carotenoids
botryoxanthin A, carotenoid from the green microalga *Botryococcus braunii* Berkeley, structure, 1065
(all-*E*)-(3*S*,5*R*,6*R*)-paracentrone, C_{31} carotenoid from sea urchin, synth, 3887

Cascade reactions
domino reaction of 3-acetyl-5-hexyn-2-one with aryl iodides under carbon monoxide, synth of various 2,3,5-trisubstituted furans depending on the alkyne/aryl iodide ratio, 6811

Catalysis
acylation of terminal alkynes catalyzed by CuI, 7323
addition of diisopropylzinc to 5-formylpyridine-3-carbamides, reaction enantioselectively catalyzed by product, 8783
allylation of aldehydes with allyltributyltin using dibutyltin dichloride as catalyst, synth of protected and free homoallylic alcohols, 3955
asymmetric allylation of aldehydes with BINOL-Ti(IV) complex accelerated by *i*-PrSSiMe_3, 7095
asymmetric catalysis using bi- and tridentate doubly *P*-chiral diphosphine dioxide ligands, 4729, 4733

asymmetric hydrogenation of β-ketophosphonates and β-ketothiophosphonates with Ru(II) catalysts, synth of β-hydroxyphosphonates substituted with a thienyl ring, 7721
asymmetric Michael reactions promoted by La-Na-BINOL complex (LSB), 5561
bis(*o*-diphenylphosphino-oxazolin-2-yl)ferrocenes, chiral ligands for Pd-coordination in allylic substitutions, 4545
1*R*,1'*R*-2,6-bis[1-(diphenylphosphino)ethyl]-pyridine-Ru complex, use in asymmetric transfer hydrogenation, 797
t-butoxycarbonyl deprotection using catalytic $Ce(NH_4)_2(NO_3)_6$ (CAN), 2027
catalytic α-acetamidoacrylic acid hydrogenolysis using chiral diphosphines, 4713
catalytic racemization of alcohols, application to enzymatic kinetic resolution, 7623
$AlCl_3$-catalyzed aminolysis of cyclic imides and oxazolidin-2-ones, 1217
Pd(0)-catalyzed isomerization of *cis*- and *trans*-3-substituted-2-carboxyvinylaziridines, 2849
chiral bis-oxazolines, synth from D- and L-diethyl 2,3-*O*-isopropylidene tartrates and chiral amino alcohols, as ligands in Cu(I)-catalysed cyclopropanation of olefins, 4073
chiral Ru porphyrin as enantioselective styrene epoxidation catalyst, 7325
chromium silicalite-2 catalyst for t-BuOOH oxidation of benzylic alcohols to aldehydes/ketones, 2067
$Co(acac)_3/AlEt_2Cl/PPh_3$ in reductive carbocyclization of 1,3,8- and 1,3,9-trienes, 2749
conformationally constrained chiral Cu-bis-(oxazoline) catalyst in enantioselective Diels-Alder reactions, 3815
copper(II) catalyzed oxidation of tetralin to 1-t-butylperoxytetralin by t-BuOOH under phase transfer conditions, 2063
deprotection of 4-methoxy- and 3,4-dimethoxybenzyl ethers using $FeCl_3$ with catalytic DDQ, 1645
diyne synth by coupling of terminal alkynes to iodo-alkynes in pyrrolidine, – by CuI and $PdCl_2(PPh_3)_2$, 2763
epoxyenynes by coupling of ethynyloxiranes to enol triflates using Pd(0) and Ag(I) –, 2019
Gif oxidations, effect of carboxylate ligands, possible involvement of a μ-peroxo dimer in hydrocarbon activation, 1133
heterogeneous – of Friedel-Crafts reactions on sulfated zirconia, benzylation of toluene by benzyl chloride and benzyl alcohol, role of benzyl ether, 5405
heterogeneous catalysts in the epoxidation of α-isophorone with hydroperoxides, comparison, 5995
iron and manganese phthalocyanines, homogeneous catalysts for oxidation of naphthalenes by peracetic acid, 1637
Li_2CuCl_4 – of coupling of benzyl iodides to aryl Grignards, 1949
metal-catalyzed diazo transfer from triflyl azide to amines, synth of aliphatic azides, 6029
Ni-catalyzed hydrovinylation of styrenes, synth of 3-aryl-1-butenes, 1157
Ni-promoted reductive cyclization of dienyl aldehyde, effect of added diene, 887
oxidation of alkanes using O_2 with catalytic 18-crown-6/$CuCl_2$/acetaldehyde, 1633
Pd-catalyzed alkyl-dechlorinations of chloroquinazolines using trialkylalanes as alkyl source, 1309
Pd-switchable reactions, dimethyl 2-stannylallylmalonate coupling with vinyl epoxides and with allyl ethyl carbonate, dependence of mode (orientation) of cyclization/addition on catalyst, 6591
phenolic silyl ethers, mild Pd-catalyzed desilylation, 153
Rh(II)-catalysed decomposition of glycine-derived diazoacetoacetamide, ligand-dependent site selectivity in, 6981
rhodium-catalyzed CH insertion in chiral ester-diazoanilides, 145
ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
cis-selective semihydrogenation of acetylenes using a nickel boride catalyst, 1057
semihydrogenation of acetylenes over Pd-catalyst on BER in the presence of CsI, synth of the corresponding olefins or *cis*-olefins, 8527
silica gel for Wittig reactions of aldehydes with stabilised P ylids, 1281
structural requirements of an external, chiral amidophosphine ligand for asymmetric reaction of lithium dimethylcuprate with chalcone, 7805
thiazolium catalysis, mechanism of, 8241
transition metal triflates in azidolysis of epoxides using 1,1,3,3-tetramethylguanidinium azide, synth of β-azidoalcohols, 1675
see also Phase transfer

Catalysts

$AlCl_3$ as catalyst for alkylation reaction of chlorobenzotrifluorides with aromatic compds to afford 1,1-dichlorodiphenylmethanes, 4063

allenyl-Pd(II) starter species in bis-cyclization-anion capture processes, synth of 1-vinyl-3-aza-bicyclo[3.1.0]hexanes, 4609
bimetallic catalysts consisting of group 8-10 and group 6 or 7 metals for hydrogenation of amides, 6749
bis-cinchona alkaloid catalyst for enantioselective dihydroxylation of bishomoallylic alcohol derivs, 1735, 1739
bis(aminophosphine)-Ni(0) complexes as – for allylation of malonate esters, 6105
role of bis(thiazolin-2-ylidene)s as catalytic species in benzoin condensation, 5019
2-bromo-4,5-dicyanoimidazole as a catalyst for conversion of cyclic phosphoramidites into phosphite triesters and dinucleotide phosphorothioates, 969, 973, 977
C_2-symmetrical diaminoferrocenyl derivs and 2-amino(sulfonamido)cyclohexanes as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
chiral – for addition of diethyl zinc to aldehydes, 8767
chiral bis(oxazoline)-Cu(II) complexes as catalysts for enantioselective Mukaiyama-Michael reactions of 2-carbomethoxy cyclopentenone, 8921
chiral Mn(III)-picolinamide-salicylidene complex for asymmetric epoxidation of olefins, 2725
chiral *N*-substituted porphyrin free bases having a conformationally locked asymmetric nitrogen atom as catalysts for Michael addition of thiophenols to cycloalkenones, 2585
chiral phosphoramides as catalysts for asymmetric allylation of aldehydes, synth of chiral homoallylic alcohols, 5149
chiral salen Schiff base for enantioselective addition of Et_2Zn to aldehydes, 4613
chiral sulfoximine/Pd-complexes as – for enantioselective allylic alkylations, 3985
chiral tartrate-derived dioxaborolidine, use as a catalyst to effect enantioselective Diels-Alder reactions of bromoacrolein and cyclopentadiene, 2989
$Co(acac)_2/NaBH_4$ for Pauson-Khand-type alkyne/alkene/CO co-condensation, 3145
cobalt(II) porphyrin, catalyst for the oxidation of organic substrates with dioxygen and 2-methyl propanal, 3769
cobalt(II)(salen) as – for electrochemical reduction of benzotrichloride, synth of 1,1,2,2-tetrachloro-1,2-diphenylethane and 1,2-dichlorostilbene–diphenylacetylene, 8105
copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands as catalysts for synth of optically active allylic benzoates from olefins, 2633
copper(I)-sulfonamide combined system as catalyst for conjugate addition of diorganozinc to α,β-unsaturated ketones, 5141
$CpCo(CO)_2$ as catalyst for Alder ene reactions of allenynes, synth of six-membered carbocycles, 7027
cyclodextrin-bis-imidazole enzyme mimic as catalyst for intramolecular aldol condensation of a dialdehyde carrying a t-butylphenyl group, 2541
diiodosamarium as catalyst precursor for ene reactions of unsaturated carbonyl compds, 5195
diketopiperazine catalyst containing the amino acid (*S*)-norarginine, solid-phase synth of, 5839
dioctylviologen as an electron transfer – in reduction of azobenzenes and azoxybenzenes to hydrazobenzenes, 6721
diorganotin dichlorides as catalysts for the trimethylsilylcyanation of aldehydes and ketones, 2525
dirhodium – $[Rh(\mu\text{-}SR_F)(C_8H_{12})]_2$ for cyclotrimerization of mono- and bis-trifluoromethylacetylenes, 6097
dirhodium(II) carboxylates as catalysts for decomposition of diazocarbonyl compds, 107
dirhodium(II) tetrakis[methyl 1-acylimidazolidin-2-one-4(*S*)-carboxylates] as catalysts for carbon-hydrogen insertion reactions of pyrrolidine-diazoacetamides, 1371
$[(\eta^3\text{-}C_3H_5)PdCl]_2$-dppf as catalyst for intramolecular hydrocarbonation of allenes bearing active methyne groups at the terminus of the carbon chain, 7453
hafnium triflate – for Fries rearrangement and for acylation of phenols and naphthols, 2053
homogeneous $Pt(COD)Cl_2/PPh_3$ as – for vinylation of aryl iodides, 8917
hydrogenation of enones using Cu/SiO_2 –, 3529
ion-exchange resins as catalysts for monoesterification of α,ω-dicarboxylic acids, 6733
(*R*)-2,2'-isopropylidene-bis(4-phenyl-2-oxazoline) and magnesium perchlorate as catalyst system for Diels-Alder reactions between 3-acryloyl-1,3-oxazolidin-2-one, 3027
$KF\text{-}Al_2O_3$ and hydrotalcite as – for epoxidation of α-isophorone with hydroperoxides, 5995
La-Na-BINOL complex (LSB) as – for asymmetric Michael reactions, 5561
lanthanide triflate as catalyst for Mannich-type reaction of *N*-(α-aminoalkyl)benzotriazoles with

silyl enolates, synth of the corresponding β-amino ketone or ester derivs, 3731
lanthanide(III) trifluoromethanesulfonates as catalysts for aqueous aza Diels-Alder reactions of an aldehyde and an amine hydrochloride, 2169
lipase from pig pancreas as catalyst for hydrolysis of alkane-1,n-diol bis-acetates into the corresponding monoacetate, 625
lithium cobalt-bisdicarbollide, catalyst for allylic substitution reactions, 8707
lithium trifluoromethanesulfonate as – for aminolysis of oxiranes, 7715
manganese porphyrins as catalysts for oxidation of isosafrole by sodium hypochlorite, competition between epoxidation and *O*-dealkylation, 1091
manganese-salen as catalyst for the asymmetric epoxidation of indene, effect of addition of 4-(3-phenylpropyl)pyridine *N*-oxide, 3271
2-mercaptobenzothiazole/ZnO as catalyst for reaction of dialkyl malonate esters with P_2S_5/S_8, synth of 5-alkylthio-3*H*-1,2-dithiole-3-thiones, 2137
methyltrioxorhenium as catalyst for direct oxidation of secondary amines, synth of nitrones, 6025
Mn-salen complex as catalyst for asymmetric oxidation of enol derivs with iodosylbenzene as a terminal oxidant, 4389
$MnBr_2$/CuCl system as catalyst for cyclisation of unsaturated alkyl bromides, synth of five membered carbo- and heterocycles, 5865
Mn(III) porphyrin complexes as catalysts for oxidation of natural compds such as 1,8-cineole, 1893
nickel(0) catalyst prepared from $NiCl_2$(dppf) and BuLi as catalyst for cross-coupling reaction of chloroarenes with phenylboronic acids, synth of biaryls, 2993
nickel boride as catalyst for the *cis*-selective semihydrogenation of acetylenes, 1057
$NiCl_2(PPh_3)_2$ as – for coupling of lithium organoborates and aryl mesylates and tosylates possessing an electron withdrawing group, 8531
$Ni(PPh_3)_2Cl_2$ as catalyst for alkylation and hydride addition of allylic ethers, 3613
$[OsCl_2(p\text{-cymene})]_2$ as catalyst for the cyclopropanation of olefins with ethyl diazoacetate, 1025
osmium tetroxyde as catalyst for dihydroxylation of allenic compds in the presence of *N*-methylmorpholine oxide, synth of α-ketols, 3333
osmium trichloride as catalyst for oxidation of olefins with peracetic acid, synth of α-ketol amino acid precursors, 3333
oxazaphospholidine oxides as catalysts for enantioselective reduction of ketones by borane, 39
palladium-chiral phosphine catalyst for elimination reaction of (±)-8α-methoxycarbonyloxy-4aβ-methyl-2,3,4,4a,5,6,7,8-octahydronaphthalene, importance of chirality reversal depending on the palladium-chiral phosphine ratio, 7115
palladium(II) complexes $[PdL_2(RCN)_2](BF_4)_2$ as catalyst of the hetero Diels-Alder reaction of dienes with aldehydes, synth of 5,6-dihydro-2*H*-pyrans, 6351
(phosphino-1,3-oxazine)palladium as – for enantioselective allylic substitution, 9143
polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst in enantioselective epoxidation of unfunctionalised olefins, 3375
polymer-supported scandium catalyst (PA-Sc-TAD) for three-component reactions between aldehydes, amines and silylated nucleophiles, synth of β-amino ketones, β-amino esters and α-amino nitriles, 9221
rhodium(II) carboxylates and carboxamides as catalysts for decomposition of a glycine-derived diazo acetoacetamide, 6981
Ru[(*R*)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]$(O_2CCH_3)_2$ as – for asymmetric hydrogenation of *N*-tosylimines, 6669
ruthenium complexes of chiral phosphinooxazolines as catalysts for enantioselective transfer hydrogenation of alkyl aryl ketones, 1381
(salen)manganese(III) complex as catalyst for aziridination of styrene derivs, 9245
scandium trifluoromethanesulfonate as – for the addition of allyltrimethylsilane to aldehydes, 3745
sulfated SnO_2 for transesterification of keto-esters, 233
sulfuric acid supported on silica-gel as catalysts for nitration of aromatics with nitric acid and isopropyl nitrate, 513
tin(IV)chloride as catalyst for reaction of hexahydro-1,3,5-triazines with alkyldiazoacetates, synth of aziridine-2-carboxylates, 7069
WO_4^{2-}-exchanged LDH as catalyst for epoxidation of simple olefins and allylic alcohols, 8557
ytterbium Lewis acid as – for Diels-Alder reactions of imines with alkenes, 7357
ytterbium triflate as catalyst for condensation of bulky amines with ethyl acetoacetate or 2,4-pentanedione, synth of enaminoketones, 3691

ytterbium triflate as catalyst for Michael addition of various β-ketoesters to enones and α,β-unsaturated aldehydes, synth of corresponding 1,4-adducts, 1879
ytterbium(III) trifluoromethanesulfonate as – for high pressure reaction of epoxides with indole, application to synth of (+)-diolmycin A2, 3727
zirconocene dichloride $CpCp'ZrCl_2$ (Cp' = 1-neomenthyl-4,5,6,7-tetrahydroindenyl) as effective, active, cheap and recoverable catalyst for ethylmagnesiation of terminal alkenes, 7139
see also Enzymes

Cephalosporins
C(2)-C(3) fused tricyclic cephalosporin by reaction of 3-alkenyl-Δ^2-cephem with acrolein, 5967
– C-9 carboxylates, esterification using vinyl and *p*-methoxybenzyl diazomethane, 1971

Cephams/cephems
3-alkenyl-Δ^2-cephems, synth by copper(I) chloride-promoted alkenylation of 3-trifluoromethylsulfonyloxy-Δ^3-cephem with alkenyltributyltin, 5967
3-cephem triflate, reaction with silyl enol ethers, 3-(β-ketoalkyl) cephems *via* four-membered cycloadducts across 2/3 positions, 7549

Cerium and compds
anhydrous cerium(III) chloride, effect of the drying process on activity and efficiency, 6787
ceric triflate for oxidation of pyrrole α-methyl groups in methanol, synth of pyrrole α-methyl methyl ethers, 315
organocerium reagents, addition to 4- and 5-oxazolidonecarbaldehydes, synth of *syn*- and *anti*-alcohols, 6677
organocerium reagents, enantioselective addition to aldehydes, effect of TADDOL ligand structure, 2675
transfer of an alkyl group from organocerium compds to the carbonylic function of a β-hydroxyketone, synth of alkyl substituted 1,3-diols, 2293
tris-TADDOL (1,3-dioxolan-derived auxiliary) organocerium addition to aldehydes, 5821

Charge transfer
complexes between methylviologen and aromatic donors within zeolite cavity, influence of alkali metal counter cations, 2873
viologens, C.T. interaction between bipyridinium and naphthyl groups in optically active species in water, 3149

Chelation
N^4-(4-aminobenzyl) 1,4,7,10-tetraazacyclododecane, 1,4,8,11-tetraazacyclotetradecane N^1,N^2,N^3-triacetic acids, synth for bifunctional –, 7515

Chemiluminescence
3-alkoxymethyl-4-3-t-butyl-4-methoxy-1,2-dioxetanes as a chemiluminescent substrate with short half-life emission, 5939
coelenterate and *Cypridina* luciferin, synth and properties of 5-hydroperoxide analogue, 8425
2,6-difluorophenyl triisopropyl/isobutylsilylperoxyoxalate, synth and kinetics of – decay on addition of DPA and fluoride, 8273

Chemotherapy
(8*R*,9*S*,10*S*)-9-deoxy-8,9-epoxy-10-hydroxydaunorubicin, antitumour compd, synth from daunorubicin, 1123
EDTA and DTPA analogues of dipalmitoylphosphatidylethanolamine as lipophilic chelating agents for metal labelling of LDL, 4685
(+)-goniodiol, styryl lactone which is cytotoxic against human lung carcinoma, total synth from α-(α'-alkoxyallenic) alcohol, 371
(*E*)- and (*Z*)-hex-3-ene-1,5-diynes, antitumour antibiotics, synth by a modified Ramberg-Bäcklund reaction of dipropargylic sulfones, 1049
manicol, antineoplastic sesquiterpene from the root bark of *Dulacia guianensis*, construction of the carbon skeleton from (*R*)-perillaldehyde, 525
neocarzinostatin chromophore, synth of naphthoic acid component of from 4-bromo-3-methylanisole by photocyclisation reaction, 587
pancratistatin, *Amaryllidaceae* alkaloid exhibiting antitumour activity, synth of aminocyclitol fragment of from 7-oxanorbornenic disulfone, 105
pancratistatin, synth of a diol from *myo*-inositol as an intermediate for synth of 7-deoxypancratistatin, 13
photodynamic –, ketobacteriopurpurins, synth and UV/vis spectra of novel types, 747
L-prolyl-L-*m*-[bis(chloroethyl)amino]phenylalanyl-L-norvaline ethyl ester hydrochloride, antitumour tripeptide ester, synth from L-*m*-sarcolysin, 563
taxanes, acid and base catalysed rearrangements of 9,10-dioxotaxanes, generation of wallifoliol from 10-dehydro-10-deacetylbaccatin III, 727
taxol, 11,12-dihydro-4-deacetyldocetaxel, synth from 10-deacetylbaccatin III, 1777

Chlorins and derivs
bacteriochlorin derivs for photodynamic therapy, synth from bacteriochlorophyll-a, UV, 6431
metallochlorins, OsO_4 dihydroxylation, effect of

substituents, bacterio- and isobacterio-chlorin synth, 3781
methyl pheophorbide-*a*, transesterification of 13-ester group ("α-keto ester" in paper), formation of steroid, deoxynucleoside and other derivs, 4945
phlorins by *meso*-alkylation and reduction of *meso*-tetraphenyl- and octaalkylporphyrins, 7699
spirochlorin and allylidenechlorin, formation by reaction of bromovinylporphyrin with tetracyanoethylene, 5931
8-vinyl-chlorophyll derivs of chlorin-e_6 trimethyl ester, partial synth, 5431

Chlorophyll
8-vinyl-chlorophyll derivs of chlorin-e_6 trimethyl ester, partial synth, 5431

Chromans
1,4-rearrangement from O to N of heterocyclyl group in 3-heterocyclyloxy-4-(sec-amino) – derivs, 4447

Chromatography
enantiomer separation of diene-$Fe(CO)_3$ complexes by HPLC on cyclodextrin-bonded stationary phase, 2405
gel permeation, (L)-tartrate-derived optically active dendritic fragments, 5935
HPLC, 5'-deoxy-5'-methylidyne phosphonate linked thymidine oligonucleotides, 6239
HPLC, dibenzoate esters of 2,11-dodecanediol, 5069
HPLC, fluoresceinated oligodeoxynucleotide M13-NH_2, 4313
HPLC, natural and synthetic deoxyaspergillic acid, 2249
HPLC, oligonucleotides containing an azobenzene linker, 637
HPLC, phosphotyrosine peptide (Stat $91^{695-708}$), 4765
HPLC profiles of enzymatic saponification of *Z*-γ,γ'-di-t-butyl-D,L-carboxyglutamic acid methyl ester, 417
HPLC and reversed-phase, mixture of $6^A,6^D$-di-*O*-(*p,p'*-biphenyldisulfonyl)-β-cyclodend Taka-amylase A, 4035
HPLC, separation of photosensitised oxidation of *cis*- and *trans*-α,α'-dimethylstilbenes, 5127
phosphorylcholine affinity columns, convenient reduction using ammonium formate/Pd-C, 7921
solid phase extraction as method for enrichment of endohedral metallofullerenes, 9249

Chromenes
3,4-didehydro-2,2,6,8-tetramethyl-2*H*-[1]benzopyran, generation, trapping, 1313
2,2-dimethyl-6-pentafluoroethyl-, epoxidation, chiral catalytic using Mn(III) salen/NaOCl, effect of donor ligands, 3895
two chromenone derivs, combination to provide a cleft type receptor for γ-hydroxymethyl-γ-lactones, 1485

Chromium and compds
η^6-arene-$Cr(CO)_3$ complexes, radical cyclisation of, synth of mono-demethoxylated hydrophenalene-$Cr(CO)_3$ derivs which are precursors for the synth of antiinflammatory pseudopterosins, 2947
benzene-$Cr(CO)_3$, lithiation, benzoylation and enantioselective reduction in synth of cetirizine hydrochloride, 4837
Cr(II) complexes of glucose derivs, formation of glycals, 1293
conformationally-restricted2-alkenylcyclopropylcarbene-chromium complexes, synth and substituent effects on ring expansion reactions to 5-alkenyl-2-cyclopentenones, 1359
cyanocyclopentadiene-$Cr(CO)_2(NO)$, synth and chemistry, attachment of derived amidine to a protein, 6561
dihydrofuranyl Fischer carbene complexes carrying thioether groups, oxidation to sulfoxides by methyltrioxorhenium/H_2O_2, 9385
1,8-diphenylnaphthalene and its mono and bis (chromium tricarbonyl) complexes, geometry, spectra, 5385
enzymic resolution of hydroxymethyl cycloheptatriene $Cr(CO)_3$ complexes, [6+4] photocycloadditions to dienes, synth of chiral bicyclo-[4.4.1]undeca-2,4,8-triene systems, 5293
(η^6-fluoroarene)tricarbonylchromiumcomplexes, nucleophilic aromatic substitution of, synth of arylpiperazines, 8487
hexa- and tri-t-butyl decacyclene (diacenaphtho-[*j,l*]fluoranthene) $Cr(CO)_3$ complexes, 8371
imidochromium(V) trichloride(dme) catalysis of tosylaziridine ring-opening by trimethylsilyl azide, effect of molecular sieve, 891
kinetic resolution of *o*-chloroanisole-$Cr(CO)_3$ by chiral Pd-catalyzed alkoxycarbonylation, 167
η^6-(4'-methylbenzyl2-*O*-acryloyl-3,4-*O*-isopropylidene-β-L-arabinopyranoside)tricarbonylchromium(0), Diels-Alder reactions of, 3713
(salen)Cr(III)-N_3/TMS-N_3, catalyst for dynamic kinetic resolution in azidolysis of epichlorohydrin, synth of chiral 3-azido-1-chloro-2-trimethylsilyloxypropane, 7937
synth of 4-, 5-, 6- and 7-membered lactones from

acetylenic alcohols or their silyl ethers and Fischer carbene $(OC)_5Cr=C(OEt)Me$, 6165
(tricarbonylchromium)naphthalene, ligand exchange reaction with a dibenzannulene, synth of bis-complexed large ring benzannulene, 6665
tricarbonyl[h^6-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium, cyclisation of, synth of isoindoline, 3307
tricarbonyl(2,4,6-trimethylphenyl-2-methoxybenzoate)-chromium complexes, nucleophilic substitution of with aryl Grignard reagents, synth of axially substituted biaryls, 6359

Chromones
2(5*H*)-furanone H-bonded to a ureido-chromone-2-carboxamide, catalysis of pyrrolidine addition, 6947
tridachiapyrone,4a,5-dihydrochromonepolypropionate from mollusc, 4259

Circular dichroism
β-alanine in peptides, stereogeometrical features studied by −, 5747
dimeric porphyrins linked through *meso*-*p*-aminophenyl tartramide groups, − of H_2, Zn and Py complexes, 8633
sagitol, a pyridoacridine alkaloid from the deep water sponge *Oceanapia sagittaria*, 9147
spectra of chiral binaphthyls, 2057
spectra of oligonucleotides containing 2'-*O*-phosphorylated ribonucleosides, 6741
spectra of 2-(2,3,7,13-tetrahydroxyoctadecanoylamino)ethanesulfonic acid, 6347
spectrum of conformationally constrained, bicyclic, 14-residue peptide containing two overlapping i, i+7 side-chain bridges, 1731
temperature dependent CD spectroscopy, formation of a self-pairing PNA oligomer with alternating alanyl/homoalanyl backbone, 475
use of ORD/Cotton effect to determine absolute configuration of cyclohexanones, 3089
vallartanone B from marine mollusc *Siphonaria maura*, 4749

Clays and earths
acetalization and thioacetalization using kaolinitic clay as catalyst, 4605
askanite-bentonite clay, catalyst for condensation of salicylaldehyde with terpenoid dienes and diene alcohols, formation of hexa- and tetrahydroxanthene structures, 6181
copper-clay based catalysts for acetylation of B15C5 crown ether with AcCl, 1473
hydrotalcite catalysis of m-CPBA Baeyer-Villiger oxidation of ketones, 4555
see also Zeolites

Cleavage reactions
acetal cleavage of 6,8-dioxabicyclo[3.2.1]octanes, synth of oxepanes, 339
cleavage of cyclopropyl alcohols, synth of organomercurials and subsequent conversion to *cis*- and *trans*-fused lactones by carbonylation in the presence of *p*-benzoquinone, 1125
dihydroxylation/glycol cleavage of tricarbonyl(triene)iron complexes, 423
electrocyclic cleavage of cyclopropanes containing a tethered diene unit, synth of trienic cyclopentane derivs, 439
Haller-Bauer cleavage in tricyclo[8.2.1.$0^{2,9}$]trideca-13-ones, synth of bicyclo[6.4.0]dodecane system present in taxanes, 2289
of 2-methylene-7-oxabicyclo[2.2.1]heptane and 6-methylene-8-oxabicyclo[3.2.1]octanes leading to substituted methylenecyclohexenols and methylenecycloheptenediols, 1727
photo-triggered selective C-terminal *N*-methylamidative cleavage of polyethyleneglycol-bound peptides, 6421
photochemical cleavage of 2,4,6-trimethylcyclohexa-2,4-dien-1-one derivs, 3631
reductive cleavage of the sulfide bond in xanthates, synth of the corresponding alkane, 5877
removal of *p*-nitrophenyl protecting group from oligosaccharides by conversion into a *p*-acetamidophenyl group followed by oxidation, 3343
selective C-N bond cleavage of 4-silyl-substituted 1,2-thiazetidine 1,1-dioxides with $EtAlCl_2$, formation of (*E*)-vinylsulfonamides, 2257
selective cleavage of allyl ethers to alcohols by use of $Ti(O\text{-}i\text{-}Pr)_4$ and a Grignard reagent, 3663
specific cleavage of the glucose-wall of 6^A,6^D-di-*O*-(*p*,*p*'-biphenyldisulfonyl)-β-cyclodextrin by Taka-amylase A, synth of a cyclic compds composed of glucoses and biphenyl, 4035

Cobalt and compds
Co catalysts for epoxidation and epoxide ring opening in synth of *N*-*aryl*-β-phenylisoserine derivs, and in synth of oxazolidine-2-thiones, 7311, 7315
cobalt(II) porphyrin, catalyst for the oxidation of organic substrates with dioxygen and 2-methyl propanal, 3769
cobalt(II)(salen) as catalyst for electrochemical reduction of benzotrichloride, synth of 1,1,2,2-tetrachloro-1,2-diphenylethane and 1,2-dichlorostilbene−diphenylacetylene, 8105
$CpCo(CO)_2$ as catalyst for Alder ene reactions of

allenynes, synth of six-membered carbocycles, 7027
$CpCo(CO)_2$ for cobalt mediated cycloisomerisation of 1,7- and 1,8-enynes, 7353
(1,3-enyne)$Co_2(CO)_6$ complexes, addition of nitrile oxides to, synth of 5-alkynyl-2-oxazoline derivs, 4341
β-hydroxy-cobaloximes, use in cationic and radical chemistry to form five- and six-membered rings, 9369
lithium cobalt-bisdicarbollide, catalyst for allylic substitution reactions, 8707
$Co_2(CO)_8$/CO at 1000 psi for ring expansion of 3,6-dihydro-2*H*-1,2-oxazines, 2713
thermolysis of benzyl cobaloximes, formation of 5-arylisoxazoles, 5413

Coenzymes
(*S*)-2-amino-N^{α}-(9-fluorenylmethoxycarbonyl)-3-(α^4,3-*O*-bis-t-butoxycarbonylpyridoxamin-5-yl) propanoic acid, synth from pyridoxamine dihydrochloride, 2129
malonyl-coenzyme A:21-hydroxypregnane 21-hydroxy-malonyltransferase from *Digitalis lanata* leaves, role of enzyme in cardenolide biosynth, 2221

Colloids
see Micelles

Combinatorial chemistry
amino alcohol library, construction by parallel synth based on Mannich-type three-component reactions of aldehydes, amines and polymer-supported silyl enol ethers followed by cleavage from the supports, 7783
aminoacids containing Ph_2P groups, incorporation into peptides on polymer support, complexation with Rh(I) and chiral hydrogenations, 6475
3-aminothiophenes and 2-methylene-2,3-dihydrothiazoles, synth on solid support, 6213, corrig. 7865
anchored electrophiles and nucleophiles for scavenging and purification in construction of non-peptide "libraries", 7193
anion exchange resins for synth of aryl and heteroaryl ethers, 5257
application of a peptide library to identify selective interaction between small peptides in an attempt to develop recognition molecules toward protein surfaces, 85
balanol, PKC-active fungal metabolite, solid-phase synth of analogues, 8439
benzimidazoles, synth on solid support, 4887
chiral cyclophanes containing 4,4'-bipyridinium dication linked through two *p*-methylenebenzamido groups to various dipeptide units, synth of mixtures of selectors, 8313
cleavage from polymer support (PEG) to form aliphatic C-H bonds, 6491
coupling reactions of aryl zinc bromides to aryl bromides bound to a polystyrene resin, liberation of the biaryl carboxylic ester by transesterification, 5491
cyclopropanation of unsaturated peptoids on solid support, generation of libraries of constrained cyclic peptoids, 6247
1,3-dialkylquinazoline-2,4-diones, synth on solid support, 4439
5,6-dihydropyrimidine-2,4-diones, solid-phase synth, 5277
diisocyanates as scaffolds for combinatorial libraries, solid-phase synth of bis-ureas from polymer-supported diisocyanates, 8141
1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, synth by $Sc(OTf)_3$-catalysed aldol reactions of polymer-supported silyl enol ethers, 5569
head-to-tail cyclic peptide libraries of varying ring size, synth using an amino acid linked by its side chain to a solid support, 591
hydantoin library, construction using a diverse set of amino acids and primary amines, 937
hydantoin-4-imides, synth on Wang resin using Ugi's method, 7489
α-hydroxyphosphonates, synth on Wang resin, 6073
indoles, synth on solid support, 4869
lanthionine, thioether analogue of cystine, synth for combinatorial and solid phase peptide chemistry by Michael addition between Fmoc-L-Cys-allyl ester and Boc dehydroalanine-methyl ester, 1101
monitoring of solid-supported reactions by magic angle spinning NMR, 4771
multiple release system for combinatorial library and peptide analysis, 135
phthalhydrazide libraries, synth in solution from substituted hydrazines and phthalimides, 3351
piperidine analogues of L-rhamnose as scaffolds for libraries incorporating trihydroxypipecolic acids, 8569
prep of synthetic receptors based on peptidosulfonamide peptidomimetics and binding selectivity against a tripeptide library, 8253
propane-2,3-diols for combinatorial oligomer synth, synth by base catalysed reaction of heterocyclic bases with *R*-(+)-glycidol, 3931

solid phase approach to quinolones using the DIVERSOMER® technology, 4815
solid phase reductive alkylation of secondary amines using borane-pyridine complex (BAP), 4819
solid phase ring-closing metathesis in a cyclisation/cleavage strategy, synth of a seven membered cycloolefin, 8249
solid phase synth of α-amino phosphonates and phosphonic acids by condensation of imines with Wang resin bound H-phosphonates, 5457
solid phase synth of peptidoglycan monomers by coupling of the corresponding lipid-bearing glycocarboxylic acids to resin bound peptides, 8097
solid phase synth of pyridines and pyrido[2,3-*d*]-pyrimidines, 4643
solid supported synth of highly functionalised pyrazoles and isoxazoles, scaffolds for molecular diversity, 1003
solid-phase synth of proline analogues *via* a three component 1,3-dipolar cycloaddition, 3671
solution and solid phase synth of 5-alkoxyhydantoin libraries with a three-fold functional diversity, 5835
synth of an *o*-nitrobenzyl photolabile linker, 5751
synth of Ro24-5913, an *N*-succinyl-3-(2-thiazolethenyl)anilide leukotriene D_4 antagonist, *via* (*E*)-4-cyclopentyl-2-[2-(3-nitrophenyl)ethenyl]-thiazole, 5445
synth of phosphotyrosine mimetics from the corresponding phenolic precursors, 3635
teicoplanin aglycone as a molecular scaffold for solid phase synth of combinatorial libraries, 6319
tetrahydro-β-carbolines by Pictet-Spengler reaction of Merrifield resin-bound tryptophan with aldehydes, 3963, 5041, 5631
tetrahydroisoquinolines and tetrahydroimidazo-[4,5-*c*]pyridines, synth on solid support, 4865
towards 2',3'-dideoxynucleoside "libraries"; 3'-alkylthio analogues from an αβ-unsaturated aldehyde, 7619
triaza[2,6]pyridinophanes for use as "scaffolds" in generation of "libraries", 7233

Complexation

p-t-butylcalix[6]arenes, effect of removal of t-butyl groups from upper rim on extraction of Cs^+ and on Sr^{2+}/Na^+ selectivity, 7975
of a calix[4]arene bridged by a cryptand unit and a crown ether chain in 1,3-alternate conformation with potassium picrate and cesium picrate, 6315
cation complexing properties of a disymmetrical coronand containing two different subunits, 5499
charge transfer complexes of [60]fullerene-tetrathiafulvalene systems with tetrafluorotetracyano-*p*-quinodimethane, electrochemical characterisation, 5979
charge transfer complexes between methylviologen and aromatic donors within zeolite cavity, influence of alkali metal counter cations, 2873
charge transfer interaction between bipyridinium and naphthyl groups in optically active species in water, association constants, 3149
chiral recognition of aminoacid derivatives by 1,1'-binaphthalene-8,8'-diol, association constants and binding energy differences, 4153
of cyclodextrins with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, no distinction between host and guest, 7433
dioxy-Mo(VI) bonded to two catechols each attached to 2-aminopyridine H-bonding receptor, adipic acid –, 1201
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, – of hydrocarbons by dimer, 8451
exciplex fluorescence in inclusion complexes of naphthalene derivatives, 4833
guest molecules complexation with monomethyl ether of monodeoxycalix[4]arene, C-H acidity effect of guest molecules, 1435
imide with 2-naphthoyloxy group as (9-)butyladenine receptor, NMR complexation-induced ^1H shifts, 6109
inclusion of deuteriated methanol and acetonitrile into tetraphenylporphyrin singly and doubly strapped with tripyrrane units, mass spectrum, 6469
metal – to assemble dendritic structures of 1,10-phenanthroline ligands with branched groups at 3,8-positions, 8293
1,10-phenanthroline-derived ligands forcing tetrahedral coordination, 267
of phenyl-linked unsymmetrical dimers containing 8,12-diethyl-2,3,7,12,13,17,18-hexamethylporphyrin and *meso*-tetraphenylporphyrin with metals, 2637
self-association through π-stacking of tetrakis and octakis(*m*-benzene-butadiyne)s, [4$_4$]metacyclophanes, 9325
2,8,14-trithio[15]-*m*- and *p*-phenylene crownophanes, Ag^+ selective receptors, 3495
of Troeger's base with boron trifluoride etherate

followed by treatment with n-BuLi, reaction of the resulting anion gives alkylation products, 6267

Complexes

functionalised transition metal complexes as building blocks for construction of multicomponent systems, 2963

Pd(II) – with chiral pyridine-bisphosphine ligand in asymmetric allylation reaction, 4475

2-propylenebis-(2-oxazoline) and 2,6-di(-2-oxazolinyl)pyridine, Cu(II) and Zn(II) – as catalysts in Diels-Alder and aldol reactions, enantioselection comparison, 7481

1,3,5-triazine.2Br_2 –, x-ray crystal structure, 3505

Computer-assisted synthesis

application of computer-aided conformational analyses to synth of key 18-membered intermediate to tedanolide macrolide, 385

Condensation

4-acetoxyazetidinone – with silyl enol ether, Lewis acid catalysis in synth of sanfetrinem precursor, 3891

of β-aminoalcohols and carbonyl compds, synth of hydroxy-enamines which can be oxidised to polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, 9203

of an amidoxime with carboxylic acids in the presence of a peptide coupling reagent in diglyme, synth of the corresponding substituted 1,2,4-oxadiazoles, 6627

role of bis(thiazolin-2-ylidene)s as catalytic species in benzoin –, 5019

of bulky amines with ethyl acetoacetate or 2,4-pentanedione, synth of enaminoketones activated by high pressure or catalysis by ytterbium triflate, 3691

1:1-cyclocondensation of α,ω-contrafunctional amines, synth of dibenzo-diaza-crown ethers, 2213

of 1,6-cycloheptatrienedicarboxaldehyde with a tripyrrane dicarboxylic acid followed by neutralisation and oxidation, synth of a cycloheptatrienyl porphyrin analogue, 8825

of *N,N*-dibenzyl α-amino aldehydes with nitroalkanes mediated by tetrabutylammonium fluoride, synth of acyclic 1,3-diamino-2-alcohols, 987

of imines by Wang resin bound H-phosphonates, synth of α-amino phosphonates and phosphonic acids, 5457

intramolecular aldol condensation of a dialdehyde carrying a t-butylphenyl group catalysed by the imidazole groups of a cyclodextrin-bis-imidazole enzyme mimic, 2541

Knoevenagel – of carbonyl compds on malononitrile in dry media under microwave irradiation and catalysed by silica gel, 1113

Knoevenagel – of 3,6-diformyl-9-heptylcarbazole and 1,4-bis(cyanoacetoxymethyl)-benzene using 4-(*N,N*-dimethylamino)pyridine as a base, synth of a carbazole cyclic dimer or carbazole main-chain polymer, 5909

lanthanide(III) triflates as catalysts for – of indoles with aldehydes in water, 4467

2-methylthiazoles with aromatic aldehydes, improved technique using NaOAc/AcOH and proposed enamine tautomer intermediate, 8659

of 3-oxohexanoic acid with L-homoserinelactone using hydroxybenzotriazole and dicyclohexylcarbodiimide, synth of 3-oxoacyl-L-homoserine-lactones and related bacterial autoinducers, 1883

of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, synth of 10,11-[1,4-naphthalendione]dipyrido[3,2-*a*;2',3'-*c*]phenazine, 5437

of 2-propylresorcinol with formaldehyde diethyl acetal, formation and isomerisation of calix[4]-resorcinarene, calix[5]resorcinarene and calix-[6]resorcinarene, 7383

of resin bound 3-hydroxyacetophenone with aryl aldehydes followed by reaction with azomethine ylid, synth of pyrrolidines, 9157

DI-selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides with samarium(II) iodide/HMPA, synth of *trans*-1,2-cyclopentanediyl-2,2'-biphenol, 8505

of C_2-symmetric substituted benzaldehydes with achiral aryldipyrromethanes, synth of D_2-symmetric 5,10,15,20-tetraarylporphyrins, 6291

three-component condensation reaction of benzyl carbamate, an aldehyde and an alkylphosphonous acid, synth of *N*-protected α-amino-alkylphosphinic acids, 4335

transition metal-catalysed diastereoselective aldol reactions of prochiral ketones with methyl isocyanoacetate, synth of methyl (4*R*,5*R*)-4,5-dihydro-5,5-(disubstituted)-4-oxazolecarboxylates, 7845

of a triisobutylaluminium complex of cysteamine HCl with a variety of carboxylic esters, synth of thiazolines, 2935

of α-trimethylsilyloxyaldehydes with cyclohexenyllithium, key step in synth of a carbonate precursor to taxane, 3313

Ugi four-component – for synth of imidazoles on Wang resin, 751

Wittig – of C-4 thiazole phosphonium methyli-

des, synth of 2,4-disubstituted thiazoles, 983
see also Aldol reactions, Mannich reactions
Configuration
absolute – of α-chiral carboxylic acids by ^{1}H and ^{13}C NMR spectroscopy using axially chiral 1,1'-binaphthalene-8,8'-diol as derivatising reagent, 4737
absolute – of the α,β-unsaturated γ-methyl-γ-lactone of the Annonaceous acetogenins by enzymatic method, 7043
absolute – of methyl (2*Z*,6*R*,8*R*,9*E*)-3,6-epoxy-4,6,8-triethyl-2,4,9-dodecatrienoate from Caribbean sponge *Plakortis halichondrioides*, 6681
absolute – of sordidin (1-ethyl-3,5,7-trimethyl-2,8-dioxabicyclo[3.2.1]octane), male-produced aggregation pheromone of the banana weevil *Cosmopolites sordidus*, 3741
absolute – of 2-(2,3,7,13-tetrahydroxyoctadecanoylamino)ethanesulfonic acid, framework of taurolipid B isolated from fresh-water protozoan *Tetrahymena thermophila*, 6347
absolute – of yessotoxin, a polyether compd implicated in diarrhetic shellfish poisoning, by NMR with a chiral anisotropic reagent, 7087
2-anthrylmethoxyacetic acid, chiral anisotropic reagent for elucidating configuration of alcohols by NMR, 4541
derivatisation of D,L-FDLA (1-fluoro-2,4-dinitrophenyl-5-leucine amide) for determination of absolute configuration of amino acids in peptide by Marfey's method, 3001
effect of the anomeric configuration on thermal stability of the duplex formed between dodecathymidine phosphoramidate and complimentary DNA and RNA strands, 5869
enantioselective reduction using alcohol dehydrogenase from *Geotrichum candidum*, different - of products from methyl and trifluoromethyl ketones, 5727
inversion of – of secondary alcohols using chloromethanesulfonyl chloride and CsOAc, 6145
lithiated phosphine oxides, instability of – using Hoffmann test, 4271
C5-C9 portion of maitotoxin, – and conformation by long-range ^{13}C-^{1}H coupling constants, 1269
relative – of carbapseudopentose moieties of hopanoids of the bacterium *Zymomonas mobilis* and the cyanobacterium *Anacystis montana*, 1791
of yessotoxin (YTX), toxin of diarrhetic shellfish poisoning, from infested scallops *Patinopecten yessoensis*, 5955
Conformation
[4.4](1,3)-adamantanophane-*trans,trans*-diene, synth, – by ^{1}H NMR, 4829
β-alanine in peptides, stereogeometrical features, 5747
application of computer-aided conformational analyses to synth of key 18-membered intermediate to tedanolide macrolide, 385
of biradicals in synth of fused cyclobutanes by intramolecular photochemical [2+2] cycloadditions, 1641
of 1,2-bridged calix[4]crowns, 1,2-alternate – by NMR and x-ray, 3907
of bridged calix[6]arenes bearing a bromide functionality in the cavity, 4039
p-t-butylcalix[6]arenes, effect of removal of t-butyl groups from upper rim on conformational mobility, 7975
conformational stability of *N*-Boc *O*-benzyl protected proline oligomers, 6235
conformationally restricted analogues of indolmycin, tryptophanyl tRNA synthetase inhibitor, from a 4-functionalised indole, 3067
conformationally-restricted 2-alkenylcyclopropylcarbene-chromium complexes, synth and substituent effects on ring expansion reactions to 5-alkenyl-2-cyclopentenones, 1359
the Curtin-Hammett principle, stereoselective radical additions to alkenes, 351
cis,cis,trans-1,5,9-cyclododecatriene, dynamic C-13 NMR study, 4267
trans-1,2-cyclohexanedicarboxylic acid derivs as pH-triggers for conformationally controlled crowns, 3981
dendrimers with internal chiral diaryl 1,3-dioxolan structures, helical –, 6077
N,N-diethyl-(2-formyl and 2-propionyl)-1-phenylcyclopropanecarboxamides, x-ray structures and nucleophilic addition, 221
diimidazolyl dideoxy-β-cyclodextrins, 7561
4,8-dimethyl-2-phenyl-1-oxaspiro[2.5]octane, study by NMR, 8447
double-two-point and four-point intramolecular bridging of *p*-t-butylcalix[8]arene, 715
enzyme preference for equatiorial methylcarboxylate groups when lipase from *Candida rugosa* hydrolyses *cis*- and *trans*-4-substituted cyclohexanecarboxylates, 9029
experimental evidence of the existence of a gauche-gauche conformation around the glycoside linkage for a lactose analogue, 1467

ferrocene 1,1'-dicarboxylic acid, bis-aminoacid derivs, ordered conformation modelling H-bonding in a polypeptide antiparallel β-sheet, 4585
four-α-helix bundle 57-peptide structure with alternating D and L segments, synth, CD, –, fluorescence, 881
heptane-1,3,5,7-tetrol diacetonides, synth, – by NMR and MM3, 4479
1,2-hydrogen migration in excited state of alkyldiazomethanes, – effects, 7209
C5-C9 portion of maitotoxin, configuration and – by long-range ^{13}C-^{1}H coupling constants, 1269
18-membered diamide-diester-thioether, NMR and conformational effects, 2071
metal-induced conformational change of calix[4]-crown bearing an ionophoric cavity on the lower rim and two pyrene groups on the upper rim, use for metal sensing and guest tweezing, 77
model of vancomycin part structure, – by ROESY and calculation by Insight II and Discover programs, 8791
of oligonucleotides containing 2'-*O*-phosphorylated ribonucleosides, 6741
side-chain – of 7-mesylpaclitaxel, X-ray study, 3425
solution structures of *cis*- and *trans*-1,7,9-trioxadispiro[5.1.5.3]hexadecane, 5461, 5465
solution studies of *p*-t-butyloxocalix[4]-, [5]-, and [6]arenes, synth *via* the corresponding CO-bridged acyclic analogues, 5959
of 2,4,6-triisopropylthiobenzophenone, C=O...H versus C=S...H abstraction geometry, 2125

Copper and compds

2-(trimethylstannyl)allylcopper(I)-dimethyl sulfide and lithium (3-trimethylgermylbut-3-en-1-yl)(cyano)cuprate, addition to cyclopent-1-enecarbaldehyde, synth of fused bicyclo[3.3.0]-octane and bicyclo[4.3.0]nonanes, 5857
bromolactonization using $CuBr_2$ on alumina, 157
catalytic O_2 oxidation of alkanes using 18-crown-6/$CuCl_2$/acetaldehyde, 1633
Cu(II) catalyzed oxidation of tetralin to 1-t-butylperoxytetralin by t-BuOOH under phase transfer conditions, 2063
chiral bis(oxazoline)-Cu(II) complexes as catalysts for enantioselective Mukaiyama-Michael reactions of 2-carbomethoxy cyclopentenone, 8921
copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands as catalysts for synth of optically active allylic benzoates from olefins, 2633
copper sulfinates, sonochemical coupling with alkynyl halides, synth of alkynyl sulfones, 3717
copper(II)-aluminium(III) couple for alkylation of aromatic amines and related compds, 3295
Cu(I)Cl-mediated coupling of alkenyltrimethylstannanes, synth of dienes, 1173
difluorovinylcopper reagent by transmetalation of an α-lithio-β,β-difluoroenol carbamate with CuX_3Li_2, subsequent reaction with activated haloalkanes and acid chlorides, 5975
Li_2CuCl_4 catalysis of coupling of benzyl iodides to aryl Grignards, 1949
lithium dialkyl cuprates, addition to half esters of 1,1'-binaphthalene-8,8'-diol followed by formal 1,2-addition, synth of optically active ketones, 7373
$MnBr_2$/CuCl system as catalyst for cyclisation of unsaturated alkyl bromides, synth of five membered carbo- and heterocycles, 5865
organo-cyanocuprates, reactions with α-(1,2-epoxyalkyl)-αβ-unsaturated sulfoxides, 8031
organocopper conjugate additions to 3-ketoacrylates, remote asymmetric induction in, 4293
organocuprate addition to αβ-unsaturated esters, influence of γ-ether substituents, synth of polypropionate and related motifs, 7473
organocuprates, coupling with 6-chloropurines, synth of 6-(*sec*-, *tert*-alkyl)purines, 1285
tri-*n*-butyltin cuprate, application in sugar chemistry, 3063
Cu(II) triflate/DBN or DBU as catalyst of Kharasch reaction of allylic acyloxylation by t-butyl perbenzoate, 8435

Corey-Kwiatkowski reactions

tandem-sequence Corey-Kwiatkowski and Horner-Wadsworth-Emmons reaction for synth of di- and trisubstituted enones, 9177

Coronands

disymmetrical coronand containing two different subunits, synth and cation complexing properties, 5499

Coumarins

4-hydroxy– fluorinated in the benzene ring, synth, 1551
isokotanin A-C, bicoumarins fom sclerotia of *Aspergillus alliaceus*, synth involving Ullman coupling and selective demethylation, 3015
Kemp's imide-linked coumarin and thymine, photocycloaddition of, molecular recognition, 8523

Coupling reactions

of acetylenic dipyrromethanes with substituted

propynals, synth of *trans*-disubstituted *meso*-tetraethynylporphyrins, 4069
acyclic enediynes, dienynes, dienediynes, by Pd-catalyzed hydrostannation and ene-yne –, 7971
Cu(I)Cl-mediated–ofalkenyltrimethylstannanes, synth of dienes, 1173
alkyl iodides, – with $\alpha\beta$-unsaturated esters using Ni_2B-borohydride exchange resin in MeOH, 3137
amide bond formation in aqueous media, use of 2,2-dichloro-4-(2-phenylethyl)-4-trimethylsilyl-furan-3(2*H*)-one as coupling reagent, 7541
of aromatic aldehydes to d,l-hydrobenzoins on treatment with anhydrous titanium trichloride in dichloromethane, 3035
aryl amines, synth by Pd-catalyzed – from aryl bromides and amines, 7181
aryl triflates with $KSiPr^i_3$ catalyzed by Pd(0), 4523
N-arylpiperazines by Pd-catalyzed –, 4463
asymmetric cross– of biaryl 2,6-ditriflates with alkynyl Grignards and chiral Pd catalysts, 3161
benzyl iodide – to aryl Grignards, catalysis by Li_2CuCl_4, 1949
biaryls *via* Suzuki cross– of polymer-bound arylsilanes, 2703
(+)-brefeldin A, approach *via* Ni-catalyzed – of cyclopentenyl acetate and lithium 2-furylborate, 6125
Pd-catalyzed – of difluoroethenezinc iodide with aryl iodides, synth of (*Z*)-α,β-difluorostyrenes, 7237
Pd(0)-catalyzed cross– of allylic carbonates with organo-Sn reagents, 6587
Pd-catalyzed reaction of 4-oxa-3-stannacyclopent-1-enes ("stannoxanes") with aryl halides, 5287
cathodic coupling of ketones with 3- and 2-(trimethylsilyl)allyl alcohols, synth of trimethylsilyl substituted 1,3-diols and homoallylic alcohols respectively, 6737
Chodkiewicz – to form alk-poly-ynyl oligopyridines, 2011
coupling of a dihydronaphthalene stannane with aryl iodides, exclusive cine substitution, evidence for intermediate Pd(0) carbenes, 6997
coupling of extremely hindered amino acids using Fmoc amino acid fluorides, 5483
cross-coupling acylation of organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, approach BCD and BCDE rings of antitumour antibiotic fredericamycin A, 1367
cross-coupling of alkenylzinc reagents with 4-iodotoluene, 4741
cross-coupling of aryl, alkenyl and alkynyl stannanes with chiral 2-bromo oxazolines, synth of 2-substituted oxazolines, 1747
cross-coupling reaction of alkylboranes with carbapenem-2-yl triflates, synth of 2-alkyl substituted carbapenems, 2589
1,2-dialkynylbenzenes, synth from catechol ditriflates by Pd-catalyzed – promoted by iodide ion, 7901
of 2,6-dichloro-3-iodoimidazo[1,2-*a*]pyridine and 2,3-dihydrofuran, synth of imidazo[1,2-*a*]pyridine *C*-nucleosides, 6275
(diethylphosphonyl)difluoromethylcadmium halides, CuCl-promoted – with aryl iodides, 2745
diethynyl oxiranes, Pd-catalyzed – of alkenyl iodides, synth of epoxy enediyne intermediates related to neocarzinostatin chromophore, 9335
dipinacol diboronate, $[(Me_4C_2O_2)B]_2$, Pd-catalyzed – forming pinacol allylboronates, 6889
epoxyenynes by – of ethynyloxiranes to enol triflates using Pd(0) and Ag(I) catalysis, 2019
of 2',3'-fused γ-butyrolactone-nucleosides with 5'-amino-nucleosides to give amide-linked nucleotide-dimer analogues, 3921
of Grignard reagents such as phenyl-, vinyl-, allyl-, benzyl- and alkyl-magnesium halides with β-perfluoroalkyl-substituted alkyl halides, generation of cross-coupled products, 5557
Hay's coupling of a bis(ethynyl) monomer, synth of optically active, axially chiral binaphthol-based oligomers, 2979
HBTU-promoted coupling of a sulfated lactoside deriv to aspartic acid residues, synth of sulfated bivalent glycopeptides designed to probe selectin recognition, 2907
Heck – of aryl bromides with butyl methacrylate, 6535
insertion and conjugate addition in Ni-catalyzed – of enones tethered to unsaturated functional groups with alkyl zincs, cyclization of ω-alkynyl enones and of bis-enones, 6839
inter- or intramolecular coupling between thioamide and amine in the presence of mercury(II) chloride, construction of the amidine linkage of amidine-linked pseudo-disaccharide, 5921
intramolecular Stille – in synth of core macrolide structure of pateamine, 9107
5-iodo-2'-deoxyuridine, Pd-catalyzed – with vinyl acetate, 9067
5-iodoimidazole to trimethylstannylvinyloxazolidine using Pd(0) catalysis, 6209

Julia – of C1-C7, C8-C17 and C18-C22 segments of curacin A, 1795, 1799
Julia coupling to establish the stereochemistry of the C(7-10) diene in synth of curacin A, 953
Lewis-acid catalyzed – of allylsilanes with tris-(phenylthio/seleno)methane, synth of homo-allylaldehyde thio/selenoacetals, 6085
low-valent Ti (McMurry) reduction of 2- and 3-pyrrylaldehydes and 3-pyrrylketones, formation of olefins, coupled dipyrrylethanes, and other products, 2721
In-mediated – of 1,3-dichloro-/-bromo-propene with benzaldehydes, synth of 1-aryl-2-chloro-but-3-en-1-ols, 8417
metathetical cross-coupling of terminal olefins with allyltrimethylsilane, synth of allylsilanes, 2117
microwave-assisted palladium-catalysed coupling of aryl and heteroaryl boronic acids with iodo- and bromo-substituted benzoic acids anchored to TentaGel S RAM, 8219
nickel(0)-catalysed cross-coupling reaction of chloroarenes with phenylboronic acids, synth of biaryls, 2993
nickel-catalysed – of lithium organoborates and aryl mesylates and tosylates possessing an electron withdrawing group, 8531
organocuprates with 6-chloropurines, synth of 6-(*sec-*, *tert*-alkyl)purines, 1285
of organostannanes with bromoquinones; synth of fenanthroviridone, gilvocarcin BE-12406X_2 and antibiotic WS 5995B, 8953
orthogonal coupling for peptide bond formation using unprotected peptide segments, acyl disulfide-mediated intramolecular acylation, 933
oxidative coupling of TTF thiolates, synth of bis-(trisubstituted tetrathiafulvalenyl) disulfides, 5115
palladium catalysed coupling of functionalised aryl bromides with allylic alcohols and homo-allylic alcohols, formation of 5-membered rings and 6-membered rings respectively, 619
palladium-catalysed – of β-tributylstannylpyrrole with aryl and heteroaryl halides, synth of β-aryl and heteroarylpyrroles, 3247
palladium-catalysed – of terminal alkynes with aryl halides under Jeffery's conditions, 5527
palladium-catalysed cross-coupling of organo-stannanes with iodanes, synth of phenyl- or 4-iodophenyl-substituted products, 3723
palladium-catalyzed – of a *N*-tosylpyrrolidinone-derived enol tosylate, 3561
Pd-catalysed – of alkenylzincs with alkenyl iodides, α-alkenylation of enones, prep of nakienone B, a marine natural product, 4679
Pd-catalyzed cross– of iodoarenes with iodozinc uracil and purine bases, 8375
Pd-catalyzed, of terminal acetylenes with iodo-arenes and diaryliodonium salts in water, 897
Pd-switchable reactions, dimethyl 2-stannylallyl-malonate coupling with vinyl epoxides and with allyl ethyl carbonate, dependence of mode (orientation) of cyclization/addition on catalyst, 6591
β-perfluoroalkyl alkyl halides, Pd-catalyzed – with organostannanes, 8405
1,10-phenanthrolines, synth of 2,9-diaryl derivs by Suzuki and Stille cross–, 267
of propargylOTHP with 1,3,5-tribromobenzene followed by ring closure, bromination and reaction with Na_2S, synth of 4,17,30-trithia-[7_3]-(1,3,5)cyclophane, 6255
reductive – of phenacyl bromide to acyl chlorides and anhydrides using SmI_2, synth of β-diketones, 3885
dl-selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides with samarium(II) iodide/HMPA, synth of *trans*-1,2-cyclopentanediyl-2,2'-biphenol, 8505
sonochemical coupling between alkynyl halides and copper sulfinates, synth of alkynyl sulfones, 3717
Sonogashira – of highly oxygenated vinyl halides, prep of anti-cancer agent harveynone and *epi*-harveynone, 7445
Stille – between diethyl bromobenzylphosphonates and heterocyclyl tributyl stannanes, 7611
Stille – of cyclohexadienyl triflate $Fe(CO)_3$ complex with vinyl-$SnBu_3$ and ethynyl-$SiMe_3$, effects of solvent, catalyst and ligand, 2731
Stille – in synth of bis[1,1'-bi-(2-methoxynaphthalen)-3-yl]acetylene, 4459
Stille, cascade hydrostannylation of terminal alkynes in α,ω-enynes followed by bis-cyclisation and Stille coupling provides exo-methylene 5/6 and 5/12-17 membered spiro- and bridged-ring heterocycles, 4413
Stille cross– using 2-bromo-4-tributylsilyloxy-methyl-2-thiazoline, 4857
Stille and Suzuki – in synth of macrolactin A precursor, 3501
succinic esters by SmI_2 – of α-haloesters, 801
Suzuki – of arenediazonium tetrafluoroborates with arylboronic acids, 3857
Suzuki – of 2,3-dimethoxyphenylboronic acid to *p*-bromobenzoyl amide residue, 1201

Suzuki – promoted by Tl_2CO_3 applied to synth of a milbemycin β3 fragment, 2507
Suzuki, biaryl formation using the Suzuki protocol: effect of base, halide and protecting group, 8829
Suzuki coupling of sterically bulky boronic acid with halopyridines in non-aqueous solvent, effect of base on acceleration of rate, 1043
Suzuki cross-coupling reaction of arylboronic acids with vinyl and aryl bromides, synth of four double bonds locked analogues of strobilurin A, 8213
Suzuki and Heck – catalyzed by preformed Pd and Pd/Ni clusters, 4499
terminal alkynes, – to iodo-alkynes in pyrrolidine catalyzed by CuI, synth of 1, 3-diynes, 2763
termolecular cascade insertion of allene into alkynyl iodo-arenes catalyzed by Pd(0), anion capture reactions forming dienyl tert. amines, 6565
tributylstannyl 4-tributylstannylbut-3-enoate, Pd-catalyzed coupling with aryl halides, synth of γ-aryl-$\beta\gamma$-unsaturated acids, 7507
unsymmetrically substituted 2,4-diyne alcohols, synth by Cadiot-Chodkiewicz –, NMR, polymerization, 5023
O-(α-zincovinyl) carbamates, cross–with aryl and heteroaryl halides and triflates, CH_3CO^- equivalent in synthesis, 6057

Crown ethers
18-crown-6/$CuCl_2$/acetaldehyde for catalytic O_2 oxidation of alkanes, 1633
1,4-alternate calix[4]arene-bis-(hexaoxa-diaza-cryptand), and analogue doubly capped with diaza-18-crown-6 rings, synth, complexation studies, 8747
B15C5 crown ether, acetylation of with AcCl and copper-clay based catalysts, 1473
1,2-bridged calix[4]crowns in 1,2-alternate conformation, 3907
calix[4]arene bridged by a cryptand unit and a crown ether chain in 1,3-alternate conformation, synth and complexation studies, 6315
calix[4]crown bearing an ionophoric cavity on the lower rim and two pyrene groups on the upper rim, synth, metal-induced conformational change and use for metal sensing and guest tweezing, 77
calix[4]crown ethers and chiral(1,3)- and (1,2)-calix[5]crown ethers, synth, 1493, 1497
calix[8]arenes with two crossing polyether chains, chirality, 7627
calix[8]crowns, regioselective synth by direct alkylation of *p*-t-butylcalixarene, 3899
catalytic 18-crown-6 in stereospecific synth of (*Z*)- and (*E*)-stilbenes by crown ether catalyzed Wittig reactions in solid-liquid two phase system, 4225
15-crown-5 nucleoside monophosphate diesters, prodrugs with anti-HIV activity, 3101
trans-1,2-cyclohexanedicarboxylic acid derivs as pH-triggers for conformationally controlled crowns, 3981
dibenzo-diaza-crown ethers, synth involving the 1:1-cyclocondensation of α,ω-contrafunctional amines, 2213
porphyrins fused with four crown ether rings, 3133
tetrathio-14-crown-4, regulator of lipase-catalyzed transesterification in organic media, 4991
2,8,14-trithio[15]-*m*- and *p*-phenylene crownophanes, Ag^+ selective receptors, 3495

Cryptands
calix[4]arene bridged by a cryptand unit and a crown ether chain in 1,3-alternate conformation, synth and complexation studies, 6315
calix[4]arene podands and – carrying nitroxyl spin labels, 8755
two tripodal precursors form macrobicyclic – when size-matched, macrotricyclic dimers when mis-matched, 8443

Crystallization
–induced dynamic kinetic resolution of dipeptide-derived 5(4*H*)-oxazolones, 6575

Cubanes
compds with the natural cubane skeleton from rearrangement of ledene and aromadendrene in superacidic media, 2631

Cumulenes
1,2,3-cyclooctatriene, generation and trapping, strain calculations, 4907
β-ferrocenylvinylheterocumulenes and ferrocene-containing imidazole rings, synth from β-ferrocenylvinyliminophosphoranes by aza-Wittig reactions, 7829
1,2-propadiene-1,3-dithione (carbon disulfide) from flash vacuum pyrolysis of 1,2-dithiole-3-thiones, 4805

Cyano compds
erythro and *xantho*apocyanine dyes, synth of ethiodides of 1-ethyl-3-(2'-quinolyl)-1,4-dihydroquinolineand3-methyl-5,6-benzoindazolino[1,2-*c*]quinoline from *N*-ethylquinolinium iodide, 4801
N-alkyl- and *N,N*-dialkylcyanothioformamides, synth by reaction of 4-chloro-5*H*-1,2,3-dithiazol-

5-thione with primary and secondary alkylamines, 3709
N-arenesulfonyl *N'*-cyano *N"*-aryl guanidines, synth, 7253
branched peptides and conformationally constrained analogues from cyanomethyleneamino pseudopeptides, 2083
α-cyano α-alkoxy carbonyl epoxides, reaction with hydroxylamine hydrochloride, synth of β-alkoxy α-oximino esters, 4693
1-cyano-2-(2-oxa-4-alkenyl)naphthalenes, regioselective intramolecular photocycloaddition of in the presence of Eu(III) salt, salt and solvent effects, 7775
4-cyano-2-butenyl group as a protecting group in oligonucleotide synth *via* the phosphoramidite approach, 6643
2-(β-cyanoalkyl)oxazolines, reduction to cyclic amidines, synth of (*S*)-4-methylpyrrolidin-2-one from (*R*)-phenylglycinol derived oxazoline, 3993
ethyl(ethoxymethylene)cyanoacetate, reaction with diethyl aminomalonate, synth of 2-amino-1,5-dihydro-4*H*-pyrrolo[3,2-*d*]-pyrimidin-4-one (9-deazaguanine), 4339
(*R*)-4-hydroxy-5-cyanopentene, a precursor of lactone moiety of mevinic acids, synth from (*S*)-3-(benzyloxy)-4-cyanobutanoic acid, 6001
2-(isopropylsulfonyl)-bicyclo[2.2.1]hept-5-ene-2-carbonitrile, reduction of *via* a radical intermediate, 4717
5-nitro-6-cyanomethylpyrimidinederivs,reductive cyclodeamination of, synth of pyrrolo[3,2-*d*]pyrimidines (9-deazaguanines), 5829
tetracyanoethylene, reaction with 2,5-dimethyl-2,4-hexadiene, remote ϵ-secondary isotope effect, 3075
tricarbonyl[η^6-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium, cyclisation of, synth of isoindoline, 3307
tricyanovinylthiophene, synth by tricyanovinylation of imdazole-thiophenes by reaction of tetracyanoethylene with the thienyllithium of imidazole, 7331
trimethylsilyl cyanide addition to chiral hydrazones derived from (*S*)-1-amino-2-methoxymethylindoline, synth of chiral α-hydrazinonitriles, 7795
trimethylsilyl cyanide in Ritter reactions, conversion of alcohols to their corresponding formamides, 8129
see also Cyanohydrins, Nitriles

Cyanohydrins
hydrolysis to hydroxy-amides, assistance from β-sulfinyl group with concomitant deoxygenation, 4569
stereospecific addition of formaldehyde dialkylhydrazones to sugar aldehydes, synth of –, 5787
O-TBDMS derivs of cyanohydrins, DIBA-H reduction of followed by hydrolysis, synth of *O*-protected 2-hydroxy aldehydes, 5893

Cyclic ketones
5-alkenyl-2-cyclopentenones, synth by ring expansion reactions of conformationally-restricted 2-alkenylcyclopropylcarbene-chromium complexes, 1359
amino cyclopentenone by Ramberg-Bäcklund chemistry of sulfones derived from methionine and homocysteine thiolactone, 7457
4-aryl-γ-butyrolactones, -furan-2(5*H*)-ones and -5-alkoxyfuran-2(5*H*)-ones, synth *via* Heck reaction of arenediazonium salts with 2,5-dihydrofuran, 8625
atropisomeric fluorocyclohexadienones, synth by *ipso*-fluorination of (*R,S*)-1,1'-bi-5,6,7,8-tetrahydro-2-naphthol, 7735
bicyclic cyclohexanones, dehydrogenation to enones and dienones using superelectrophilic trichloromethyl cation as a strong hydride acceptor, 7731
bicyclic and tricyclic ketones, treatment with lithium ethynyl acetylide followed by addition of a catalytic amount of CSA or *p*-TSA, synth of exocyclic olefinic esters, 8109
bicyclo[2.2.2]oct-5-en-2-one, Baeyer-Villiger reaction of followed by Pd(0)-catalysed lactone migration, synth of *cis*-fused hydrobenzofurans, 7809
2-carbomethoxycyclopentenone,enantioselective Mukaiyama-Michael reactions of catalysed by chiral bis(oxazoline)-Cu(II) complexes, 8921
(+)-cassiol, antiulcerogenic compd , synth using diastereoselective intramolecular [3+2] dipolar cycloaddition reaction of a nitrile oxide, 9229
cyclobutyl ketones, synth by naphthalene-catalysed reductive cyclisation of substituted 1,4-dihalobutanes, 443
cyclohexanones and cyclohexenones, stereoselective reduction to compds bearing an equatorial alcohol function in aqueous glycosidic media, 53
cyclopentenones, synth by reaction of (3-alkoxycarbonyl-oxo-propylidene)triphenylphosphorane with 1,2-diacylethylenes, 401

12,18-cyclopregnane-11,20-dione, base-catalysed rearrangement of, synth of 12(13→18)-*abeo*-pregnane, 929
(*E*)-5,5'-dimesitylbifuranylidenedione, reaction with Horner-Wittig reagent, 9255
4,5-dimethyl-3,6-diphenylmorpholin-2-one, formation by rearrangement of 2-benzoyl-3,4-dimethyl-5-phenyl-1,3-oxazolidines, 8223
2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, synth and use in prep of vinyl cyclopropane carboxylic acids, 7119, 7123
8,9-diphenyltricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one, photochemistry of, [1,3]sigmatropic rearrangement via a singlet excited state and [2+2] intramolecular cycloaddition *via* a triplet excited state, 7065
enantiopure oxatricyclo[3.3.1.$0^{4,6}$]nonanes, synth and selective opening of an activated cyclopropane ring, 9187
farnesyl and geranylgeranyl pyrophosphate analogues incorporating benzoylbenzyl ethers as inhibitors of farnesyltransferase, 8833
trans fused enone as intermediate in total synth of forskolin, a labdane diterpene isolated from the roots of *Coleus forskohlii*, 1015, 1019, 1023
α-iodomethylcyclopentanones, radical expansion and cyclisation of, synth of *cis*-decalins, 6355
medium and large cyclic ketones by free radical expansion of cyclobutanones with sequential Grob fragmentation, 957
5-oxaspiro[2,4]hept-4-ones, formation by intramolecular photocycloaddition of cyclopropene carboxylic acid allylic esters, 8879
phoeniceroside (2,2-bis-(5-methyl-4-(*O*-β-D-glucopyranosyl)-3(2*H*)-furanone)-propane) isolated from *Juniperus phoenicea*, structure, 2955
[3.3.1]-propellanone by methanolysis of 2-oxobicyclo[3.3.1]non-1-yl triflate, 8185
protected 2-thia-5-azabicyclo[2.2.1]heptan-3-ones, synth from 4-hydroxyproline as intermediates to carbapenem side chains, 2919
pyrrolo[2,1-*a*]isoquinolones, intermediates to *Erythrina* alkaloids, synth by sequential addition of organolithium reagents and *N*-acyliminium ion cyclisation of *N*-phenethylsuccinimide, 7841
3-substituted 1(3*H*)-isobenzofuranones (phthalides), asymmetric synth by reduction of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, 2205
4-substituted cyclohexanones, catalytic asymetric deprotonation of by employing bidentate chiral amine in the presence of a tridentate achiral lithium amide, 8191
4-substituted pentacyclo[4.3.0.$0^{2,4}$.$0^{3,8}$.$0^{5,7}$]-nonan-9-ones, fragmentation to furnish functionalised tricyclo[3.2.1.$0^{2,7}$]octene derivs, 2655
2-tetralones by acidic hydrolysis of epoxyamides derived from 1-tetralones, 3243
thiobenzophenones, reaction with phenyl[2-(trimethylsilyl)phenyl]iodonium trifluoromethanesulfonate in the presence of tetrabutylammonium fluoride, first isolation of benzyne-thiobenzophenone adducts, 8883
2,2,6-trimethyl-4*H*-1,3-dioxin-4-one, reaction with imines, synth of *N*-alkenyl acetoacetamides, 7429
turmeronol B, phenolic sesquiterpene ketone from *Curcuma longa* L., synth from 2-hydroxy-4-methylacetophenone, 2279
α,β-unsaturated dioxolanones derived from mandelic acid, addition to Grignard reagents to yield adducts which could be converted to allylic alcohols and α-hydroxy aldehydes for use in eicosanoid synth, 1421, 1425
vallartanone B, a γ-pyrone-containing polypropionate from marine mollusc *Siphonaria maura*, synth and structure, 4749

Cyclisation

8-*endo versus* 5-*exo* cyclisation of unsaturated acrylate esters upon reaction with t-BuHgI/KI, 2557
8-*endo* − of (alkoxycarbonyl)methyl radicals, synth of (−)-clavukerin A and (−)-11-hydroxyguaiene from (+)-limonene oxide, 5929
abnormal Pummerer − of sulfoxides to sulfides, 5217
of acid chloride of *N*-tosyl-2'-phenethylglycine in synth of (±)-*trans*-10,11-dihydroxy-5,6,6a,7,8,12b-hexahydrobenzo[a]phenanthridine (dihydrexidine), 6971
acid-catalyzed − of *N*-(1,4-dihydropyridinylacetyl)indoles, necessity for LiI, 7653
of acyliminium salts derived from Friedel Crafts reaction of a pyroglutamic acid deriv, synth of a condensed *N*-acylheterocycle which provides access to an amine, 485
O-alkyl oximes of 5-*O*-tosyl aldopentose derivs, tandem reduction and − forming 1,3,4,5-tetrahydroxypiperidine derivs, 1547
α-allyl-α-carboxy-γ-lactones, base-promoted cyclization to cyclopentenones *vs* 1,2-ester group migration, effect of substituents, 3199
2-aminoindoles, − reactions with acetylenic

esters, 4931
anodic – of alkenyl aromatics and enol ethers, and t-Boc proline ester oxidation, operation using a simple lamp battery, 8317
2-benzazepines and 1,4-benzoxazepines *via* Bischler-Napieralski reactions with *N*-(β-aryloxyethyl) and (β-arylpropyl) oxamides, incorporation of acetonitrile, 4275
5-(bromoalkyl)-5*H*-dibenzo[*a*,*d*]cycloheptenes, Bu_3SnH/AIBN –/reduction, preference for radical 6-membered ring formation over 5-membered, 3845
of 3-(2-t-butylthiophenyl)-prop-2-en-1-ols, synth of 2,3-disubstituted and 2,3,3-trisubstituted 2H-1-benzothiopyran derivs, 5077
cascade hydrostannylation of terminal alkynes in α,ω-enynes followed by bis-cyclisation and Stille coupling provides exo-methylene 5/6 and 5/12-17 membered spiro- and bridged-ring heterocycles, 4413
cationic cyclisation of an acyliminium ion with a ketene dithioacetal terminator in synth of 1β-methylcarbapenems, 7811
of a chiral oxazolidine as a key-step for the synth of functionalised piperidines, 4001
cyclohex-2-enones and bicyclo[3.3.0]octan-3-ones by radical – of α-ketenylalkyl and αβ-unsaturated acyl radicals, 271
cycloreduction of enediynes to the corresponding [m,5,n] tricyclic compds *via* alkylpalladium intermediates, 8875
diastereoselective triple radical – of a bromomethyldimethylsilyl allyl ether, construction of the B-ring of taxanes, 6295
of 4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-diazabutadiene, synth of *N*-aminopyrroles and pyridazines when combined with enamines, 1351
diols to cyanomethyl sulfones by Mitsunobu alkylation, 2459
electrocyclisation in bicyclo[4.4.1]undeca-2,4-diene and bicyclo[4.2.1]nona-2,4-diene systems, 2553
electrocyclisation of triene derivs in synth of a chiral cyclohexane intermediate to the (–)-tetrodotoxin skeleton, 8199
electrophilic – of unsaturated hydroperoxyacetals and -ketals, synth of 1,2-dioxanes, 1,2,4-trioxanes and 1,2,4-trioxepanes, 463
of a functionalised (*E*,*E*,*E*)-cyclododeca-1,6,8-triene, key step in diastereoselective synth of the *trans-anti-cis*-decahydro-*as*-indacene ring system, 8065
(±)-heliotridane and (6*S*,7*S*)-dihydroxyheliotridane, synth by radical –, 5825
– of hexose-derived aldehydo-olefins using SmI_2, formation of methylcyclopentane triols and tetrols, 1305
indium-mediated intramolecular carbocyclization of α-bromomethyl-ω-oxo-αβ-unsaturated esters in aqueous media, 5341
insertion and conjugate addition in Ni-catalyzed couplings of enones with unsaturated functional groups and alkyl zincs, – of ω-alkynyl enones and of bis-enones, 6839
intramolecular 6-exo-dig radical cyclisation approach to (±)-erigerol using SmI_2, 5519, 5523
intramolecular – of a fully protected kojibiosyl trichloroacetimidate, synth of the cyclic oligosaccharide cyclokojibiose, 3627
intramolecular – of hydroxylamines derived from limonene, reverse-Cope mechanism rather than acid-catalysed process, 6417
intramolecular – of *N*-nitroso and azido groups, synth of 4*H*-[1,2,3]triazolo[4,5-*c*][1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivs, 8577
intramolecular – of *N*-trifluoroacylated phenethylamines, synth of 1,2,3,4-tetrahydroisoquinolines, 5453
intramolecular anionic – of bromophenol, synth of (±)-Δ^2-cedrene, a sesquiterpene with tricyclo[5.3.1.$0^{1,5}$]undecane framework, 4421
intramolecular aryl radical – of enamide, synth of benzothienoindolizidines, 7707
intramolecular aryl radical cyclisation of *o*-bromobenzaldehyde and allyl amine in the presence of tributyltin hydride, synth of fused tricyclic β-lactams, 1363
intramolecular cationic cyclisations initiated by electrocyclic cleavage of cyclopropanes, synth of trienic cyclopentane derivs, 439
intramolecular nucleophilic β-substitution of 1-phenylsulfonyl-2-acylindoles, application to alkaloid synth, 4283
intramolecular radical – and Heck reaction of *N*-allylisogramine deriv, synth of 4-substituted-1,2,3,4-tetrahydro-β-carbolines, 2659
intramolecular reaction of γ-aminoallylstannane with aldehyde, synth of hydroxylated piperidines and pyrrolidines, 2109
endo-endo intramolecular reductive cyclisation of a 1,4-diyne using lithium naphthalenide followed by oxidative coupling, synth of 1,1'-bicyclopentadiene, 2983

iodine-induced – of *endo*-thioester substituted norbornenes followed by methylthio group rearrangement, synth of a diacetal trioxa-cage compd, 8209
of 1-(4-iodobutyroyl)-1,4-dihydropyridine-3-carbaldehyde derivs under Luche conditions, 1599
isomerisation/cyclisation of a halo or nitro amidoxime, key step in synth of 3-(4-pyridinylamino)-1,2-benzisoxazoles, 995
kinetic – of a series of linear quinine oligomers, 6013
kinetic *vs* thermodynamic control in synth of cyclic ethers by PhS migration, 3525
of methyl 2,3-diphospho-D-glycerate using dicyclohexylcarbodiimide, key step in synth of cyclo-2,3-diphospho-D-glycerate from D-mannitol, 355
methyl 2-hydroxy-1- and 1-hydroxy-2-naphthoates by acid-catalyzed – and Wolff rearrangement with –, respectively, of methyl 5,5-diphenyl-2-diazo-3-oxopent-4-enoate, 8277
N-aryl-*N'*-methoxyureas, oxidative cyclization by $PhI(OCOCF_3)_2$ forming 1-methoxybenzimidazolin-2-ones, 2361
N-butyl-2,6-dinitroaniline, action of base forming 7-nitro-2-propylbenzimidazole3-oxide,structure requirements for –, 767
naphthalene-catalysed reductive – of substituted 1,4-dihalobutanes, synth of cyclobutyl ketones, 443
Ni-promoted reductive cyclization of dienyl aldehyde, effect of added diene, 887
nona-1,3-dien-8-ynes, Ti-mediated – to 1-methylene-2-alkenylcyclopentane derivs, 1253
olefinic fluorine-substituted hex-5-enyl radical –, kinetics, 5321
oxidative – of 3-hydroxy 4-vinyl furanoside derivs to bis-furanosides, 6007
oxidative Mannich – of α-silyl-amines and -amides, synth of hydropyridines, 571
of *N*-3-oxoalkylamides, synth of 6-acetoxy-5,6-dihydro-4*H*-1,3-oxazinium perchlorates, subsequent reaction with sodium hydrosulfide results in *N*-3-oxoalkylthioamides, 5203
of γ-oxygenated-α,β-unsaturated sulfones, synth of hydroxypyrrolidines and hydroxypiperidines, 3379
palladium(0)-catalysed cascade cyclisation on carbohydrate templates, synth of bis-annulated pyranosides, 59
palladium-catalysed – of the potassium carboxylates of pentynoic acids 3- or 5-substituted with an iodo-aryl moiety, synth of benzo-annulated enol lactones, 1429
palladium-catalysed reductive – of cyclohexenol in synth of (+)-pumiliotoxin C, 4401
palladium-catalyzed –/allene insertion/anion capture cascades, 4221
PET cyclisation of α-trimethylsilylmethyl amines with tethered non-activated olefins, synth of (–)-retronecanol, 2285
PET-oxidative – of unsaturated silyl enol ethers, synth of bicyclic and tricyclic ketones, regioselective control by solvent effects, 7349
of 4-phenylsulfanyl-1,3-diols with secondary and tertiary alcohols as nucleophiles, synth of substituted tetrahydrofurans, 4077
photo– of enaminoesters, synth of spiroindoline imides and their transformation into precursors of *Aspidosperma* alkaloids, 37
Pictet-Spengler reaction of Merrifield resin-bound tryptophan with aldehydes, synth of tetrahydro-β-carbolines, 3963, 5041, 5631
polyene – promoted by the cross conjugated α-carbalkoxy enone system, 8073
5-exo-of 2-(2-propenoxy)phenyllithium to (2,3-dihydrobenzofuranyl)methyllithium followed by γ-elimination to give the lithium salt of 2-(cyclopropyl)phenol, 5435
radical – of η^6-arene-$Cr(CO)_3$ complexes, synth of mono-demethoxylated hydrophenalene-Cr $(CO)_3$ derivs which are precursors for the synth of antiinflammatory pseudopterosins, 2947
radical – of *N*-ethenyl trichloroacetamides, synth of β-lactams, formation of γ-lactams when exposed to nickel powder and acetic acid in 2-propanol, 1397
radical – of phenyl 2-*N*-allylamino-3,4,6-tri-*O*-benzyl-2-deoxy-α-D-1-seleno *galacto* and *gluco* pyranosides, synth of 2-amino-2-deoxy-α-D-C-glycopyranosides, 9193
radical cyclisation of β-aminoacrylates, synth of indolizidine alkaloids 167B and 209D, 1445
radical expansion and cyclisation of α-iodomethylcyclopentanones, synth of *cis*-decalins, 6355
reductive – of a 1,1-dibromoalkene to an acetylene, key step in synth of the core unit of homopumiliotoxin alkaloids, 7151
reductive – of *N*-iodoalkyl cyclic imides to nitrogen-fused polycyclic amides induced by samarium diiodide, 2577
reductive carbo– of 1,3,8- and 1,3,9-trienes

catalyzed by $Co(acac)_3/AlEt_2Cl/PPh_3$, 2749
reductive cyclisation of an azide employing hexamethyldisilathiane, synth of pyrrolo[2,1-*c*][1,4]-benzodiazepine antibiotics, 6803
sequential Michael and Henry reactions starting with *N*-benzyl-L-serine methyl ester or serinol deriv, synth of nitropyrrolidines, 7599
solid-phase synth of peptides with tripodal side-chain bridges, optimisation of the solvent conditions for solid-phase cyclisations, 2173
stannane mediated vinyl iodide radical –, improvement of 5-*exo*/6-*endo* ratio by catalytic Ph_2Se_2, 3105
stereoselective oxidative radical – of polyene containing an α,β-unsaturated electrophore, introduction of an angular C-8 cyano group into polycyclic systems, 1751
of *ortho*-substituted benzonitriles, synth of 3-amino-1,2-benzisoxazoles, 2885
of substituted oxiranyl radicals generated from glycidic acids, 6299
of (*Z*)-1-substituted-5-silyl-4-penten-1-ols catalysed by *p*-toluenesulfonic acid, synth of 2,5-disubstituted tetrahydrofurans, 487
switch to the C^2-C^6-cyclisation from the Myers-Saito reaction in enyne-allene thermolyses, 7691
synth of furan-acetone cyclic nonamer and of other oligomers from linear trimer, 4593
tandem acylation-cycloalkylation of 3,4-dimethoxyphenylethylamine by cyclohexene-1-acetic acid, synth of *N*-nornuciferine, 1671
tandem radical – of acylsilanes with alkene or alkyne functionalities attached to silicon, synth of cyclic silyl ethers which could be oxidatively hydrolysed to give diols or ketone alcohols, 7767
thermodynamic spirocyclisation of a diketodiol, synth of *cis*- and *trans*-1,7,9-trioxadispiro-[5.1.5.3]hexadecane, 5461, 5465
of tricarbonyl[η^6-(*R*)-*N*-cyanomethyl-4-phenyl-oxazolidine]chromium, synth of isoindoline, 3307
of trimethoxy-*o*-aroyldiphenylphosphoryl methylbenzamide, synth of (±)-cherylline and (±)-cherylline dimethylether (*Amaryllidaceae* alkaloids), 3697
tungsten carbonyl-induced – of alkynyl alcohols to dihydropyranylidene carbenes and α-stannyl dihydropyrans, 4675
type II intramolecular carbonyl ene reactions of vinyl silanes, synth of methylene silacyclohexanols, 3411
of unsaturated alkyl bromides catalysed by $MnBr_2/CuCl$ system, synth of five membered carbo- and heterocycles, 5865
Wagner-Meerwein rearrangements in – of 9-(keto-cycloalkylmethyl) fluorenes and benzo[*b*]-fluorenes, 1535
zirconacyclization of 1,6-enynes in synth of linear and angular triquinanes, 857

Cyclitols
allosamizoline, amino– derivative of chitinase inhibitor allosamidin, mechanism of cyclopentane ring formation, 5711
hydroxyiodination of acetoxy-cyclohexenes, prep of tetraacetyl conduritol D, 6579
methylcyclopentane triols and tetrols from hexose-derived aldehydo-olefins using SmI_2, 1305
phenoxy- and acetoxy- 6-iodo-6-deoxyglycosides into methylcyclopentanetriols using SmI_2, 5817

Cycloaddition
[4+3], intramolecular, of 2-methoxy-3-phenylthioallylium ion to furan, thiophene, cyclopentadiene, 783
[3+2]- – *via* Diels-Alder/retro-Diels-Alder sequence, synth of 6,13-diisopropylidenetricyclo-[$9.3.0^{1,11}.0^{4,8}$]tetradeca-1(14),4,7,11-tetraene, 2517
arene-alkene photocycloaddition-radical cyclisation cascade sequence for synth of *cis,cis,cis, trans*-[5.5.5.5]-fenestranes from toluic acid derivs, 7687
asymmetric 1,3-dipolar cycloaddition of nitrones to olefins catalysed by chiral phosphine-palladium complexes, synth of isoxazolidine, 5947
asymmetric Bradsher cycloaddition of chiral (*Z*)-enol ethers and 2,7-naphthyridinium salt, synth of highly functionalised isoquinoline derivs, intermediates to Manzamine A, 7019
[3+2] azomethine ylid dipolar cycloaddition with *N*-(butoxymethyl)-*N*-(trimethylsilylmethyl)-benzyl amine, key step in synth of RP 73613 NK1 antagonist, 7743
azomethine ylid Sm(III) complexes, – to αβ-unsaturated esters, synth of 1-pyrrolines, 6573
azomethine ylids from aldehydes and aminoacids, – to C_{60} fullerene, 775
of 2-benzoyl-1-cyclohexyl-3-phenyl-aziridine induced by microwave irradiation, 4203
of 1-benzylpiperazin-2-one nitrone with alkynes and alkenes to give Δ^4-isoxazolines and isoxazolidines, subsequent opening to 3-substituted

piperazin-2-ones and 1,3-amino alcohols, 7339, 7343
of α-carbamoyloxy-β,β-difluoroethenyl phenyl sulfone,1-(*N,N*-diethylcarbamoyloxy-2-fluoro-2-(phenylsulfonyl)-ethene and its desulfonated equivalent, 8233, 8237
[3+2]- of carbonyl ylids bearing only alkyl substituents or no substituents, synth of tetrahydrofurans, dihydrofurans and dioxolane, 9241
Pd-catalyzed [4+2] – of 2-iodoaryl allenes, synth of naphthalenes and fused dihydronaphthalenes, 4251
π4s + π2s cycloaddition of allyl anion with ethylene, theoretical investigation of, 7679
[2+2]-cycloaddition of dihydrofuran and dihydropyran to quinones *versus* Lewis acid promoted spiroannulation, 5221
[3+2] cycloaddition reaction of 1-(alkylthio)-2-(trimethylsilylmethyl)allyl esters, methylenecyclopentane annulation, 5943
cycloaddition route to molrac spacer and platform systems which incorporate the 1,4-benzoquinone chromophore, 2157, 2161
3-*O*-cyclohexenyl carbohydrate nitrones, intramolecular –, diastereoselective synth of 9-amino-2,3,8-trihydroxyperhydrofuro[3,2-*b*][1]-benzopyran derivs, 7635
diastereoselective intramolecular – of nitrones to olefins, synth of perhydro-furo- and -pyrrolo-[4,3,2-*cd*]1,2-benzisoxazoles, 841
of dicyanoazomethine ylids derived from 3,4-diazanorcaradienes, 1583, 1587
3,4-didehydro-2,2,6,8-tetramethyl-2*H*-[1]benzopyran, trapping by furan, 1313
[4+2]- – of 2-diethoxyphosphonyl-1-alkoxy-3-methylpenta-1,3-dienes, 2951
[3+2] *vs* [2+2] – in dihydroxylation by OsO_4 catalyzed by bis-cinchonine-pyridazine, distinction by kinetic isotope effects, 4899
dimethyl 1,2,4,5-tetrazinedicarboxylate, – to 2,3-dioxabicyclo-[2.2.2]oct-5-ene and -[2.2.1]-hept-5-ene, and 6,7-dioxabicyclo[3.2.2]non-2- and -8-ene and -2,8-diene, 921
1,3-dipolar – of alkynes to polymer bound münchnones, synth of tetra- and penta-substituted pyrroles, 2943
1,3-dipolar – of *N*-benzyl-*C*-carboxy-nitrone to various olefins, effect of added triethylamine on regioselectivity, 6157
1,3-dipolar – of nitrile-*N*-oxides with 3,5-di-t-butyl-1,2-benzoquinone, formation of spiro-1,3-dioxazoles, 5623
1,3-dipolar – to imidazolinium ylids, synth of perhydropyrrolo[1,2-*a*]imidazoles, 1707
1,3-dithioledithione, generation and – to styrene and stilbene, preparation of Ph-substituted 5,6-dihydro-1,3-dithiolo[4,5-*b*][1,4]dithiin-2-thiones, 7603
endo heterocycloaddition of (*E*)-benzyloxymethylene pyruvate with *O*-vinyl mandelic ester, synth of (3,4,6)tri- and (3,4)-di-*O*-benzyl-2-deoxy-L-glucose, 4007
enol ethers to acylketenes generated from acyl Meldrum's acid, 6499
π-facial selectivity in cycloadditions to bicyclo-[2.2.2]oct-2-enes with 5,6-*cis-exo*-substituted electron withdrawing groups, 1321
[60]fullerene – to cyanogen dioxide, 2:1 and 3:2 adducts detected by MALDI-TOF MS, 4137
generation and trapping of nitrones and bis-nitrones from oximes, synth of symmetrically linked bi-isoxazolidines, 4597
of D-glucose based dienes with *in-situ* generated 2-methoxycarbonyl-*p*-benzoquinone, synth of cycloadducts which could be transformed into functionalised decalins, 4055
glycine Schiff bases, – with crotonate and 4-bromocrotonate, synth of pyrrolidines and cyclopropanes, and of CCG-II, 2857, corrig. 5027
hetero-1,3-dipolar – of dithiolane-isocyanate iminium methylides, route to 1,3-oxazolidine- and thiazolidine-2-thiones, 711
hetero–of(*S*)-(+)-3-*p*-tolylsulfinylbut-3-en-2-one with various electron-rich dienophiles, 3687
[2+2] – of an imine and an acid chloride followed by rearrangement of the resulting β-lactams, synth of enantiomerically pure pyrrolidinones, 4627
intramolecular 1,3-dipolar – of 5-azido-5-deoxy-aldopentose ketene dithioacetal bis(sulfones) in the synth of imino sugar analogues, 3925
intramolecular 1,3-dipolar cycloaddition approach to 4-keto-4,5,6,7-tetrahydroindoles, 2887
intramolecular 1,4-dipolar – of an anhydro-4-hydroxy-2-oxo-1,3-thiazium hydroxide across a tethered indole π-bond, synth of pentacyclic skeleton of *epi*-eburnamenine, 335
intramolecular [2+2] – of ketenimines with imines, synth of azeto[2,1-*b*]quinazolines, 8945
intramolecular [2+2] photo– of 6-alkenyl-2,3-dihydro-4-pyrones and rearrangement of the products, 1663
intramolecular [2+2] photocycloaddition of

alkene-enones photosubstrates, trapping of 1,4-diradical intermediates in, 8941
intramolecular [2+2] photocycloaddition, competition with hydrogen-abstraction reaction during photolysis of *N*-alkyl-*N*-allyl-2-carboxamidocyclopent-2-enones, 5885
intramolecular [2+2] photocycloaddition-fragmentation approach to synth of asteriscanolide, 2177
intramolecular [3+2] dipolar cycloaddition reaction of a nitrile oxide for construction of the asymmetric quaternary carbon centre of (+)-cassiol, 9229
intramolecular – of an azadiene and an aryne, route to lycorine alkaloids, 405
[2+2] intramolecular cycloaddition of 8,9-diphenyltricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one *via* a triplet excited state, 7065
intramolecular dipolar – of 3-substituted 5-hexenyl nitrile oxides, *gem*-dicarboalkoxy effect, 451
intramolecular photochemical [2+2] –, biradical conformation control in synth of fused cyclobutanes, 1641
intramolecular photocycloaddition of cyclopropene carboxylic acid allylic esters, formation of 5-oxaspiro[2,4]hept-4-ones, 8879
[4+2]- – of methyl 5-aminofuroate followed by dehydration of the cycloadducts, synth of polysubstituted anilines, 2903
1,4-naphthoquinones to styrenes promoted by Me_2AlCl or $MeAlCl_2$, cyclobutanaphthalenedione products, synth of 6,11-dimethoxy-5-phenylnaphthacene-1,4-quinone, 9397
– of nickel(II) β-vinyl-*meso*-tetraphenylporphyrins with TCNE, 3569
nitrile oxides, nitrones, diazoalkanes, nitrilimines, – to 1-acetylvinyl carboxylates, high regioselectivity and ready aromatization of dihydroazole adducts, 6835
of hex-3-yne-2,5-dione onto a π-CS_2 iron complex and 3-thioxo-1,2-dithioles, synth of diacetylated intermediates which can be converted into polyacetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivs, 8861
[4+2] – of oligo(1,3-dithiole-2,4,5-trithione) with olefins, key step in synth of aromatic ring-annelated bis(ethylenedithio)tetrathiafulvalene derivs, 8085
[6+3]- – of 2-oxyallyl cation and fulveneketene acetal, synth of indane ring systems, 659
palladium-catalysed [3+2]-cycloaddition reactions of glycals and phenylsulfonyl-activated unsaturated carbohydrate derivs, 2303, 2307
palladium-catalysed cascade cycloaddition/formal Friedel-Crafts vinylation/alkylation reactions using alkyne substrates, 3399
penta-1,5-dien-3-ynes, criss-cross – with two molecules of dienophile, stereochemistry, mechanism, 1559
photo– of norbornadiene to naphthalene-1-carbonitrile, 4895
photocycloaddition of Kemp's imide-linked coumarin and thymine, molecular recognition, 8523
[6+6]-photocycloadditions in face to face benzo/pyridazino systems, approach to diazapagodanes, 4491
of propargylthiodimethylsilane with ketenes, synth of dimethylsilanethione ($Me_2Si=S$), 7017
regioselective intramolecular photo– of 1-cyano-2-(2-oxa-4-alkenyl)naphthalenes in the presence of Eu(III) salt, salt and solvent effects, 7775
[2+2]retrocycloaddition of 4,5,10,11-tetramethylheptacyclo[8.2.1.$1^{2,5}$.$1^{4,7}$.$1^{8,11}$.$0^{1,8}$.$0^{2,7}$]hexadecane to an isomeric diene: DSC, MM2 and ^{1}H NMR study, 8601, 8605
rhodium acylcarbenoid – in synth (±)-aflatoxin B_2 precursor, 2391
[1+2]- – of silylene with alkenes and dienes, synth of siliranes and vinylsiliranes, prep of isonitrile insertion products, the silacyclobutanimines, 3675
4-silyloxy-1,3-oxazin-6-ones, reaction with – with acetylenic esters and enamines, synth of 2-pyridones, 4973
4-silyloxy-1,3-oxazin-6-ones, reaction with acetylenic esters and enamines, synth of 2-pyridones, 4977
stepwise – of *N*-phenyl hydrazidoyl cyanides to acrylates, 8771
tandem [2+2] cycloaddition-cycloreversion reaction between acyl chlorides and α,β-unsaturated aldehydes, synth of substituted alkenes, 7143
of tetracyanoethylene with 2,5-dimethyl-2,4-hexadiene, remote ε-secondary isotope effect, 3075
three component 1,3-dipolar cycloaddition of a resin bound azomethine ylid, solid-phase synth of proline analogues, 3671
of trifluoromethyl azomethine ylids with olefins, synth of 2-trifluoromethyl pyrrolidines and pyrrolizidines, 5515
of tryptophan with a tethered 1,2,4-triazine, 5061

Cycloalkanes
anodic oxidation of cyclic ketones in methanol, effect of ring size, 5759
1,2-bis(*N*-methoxy-*N*-nitrosoamino)cycloalkanes thermolysis of, synth of 4,5-dihydro-1,2,3-triazole 2-oxides, 5997
N-substituted derivs of 1,2-methylene-3,4-aziridino 2-phenylsulfonyl cycloalkanes, synth from epoxy cyclopropanes *via* ring opening with sodium azide and subsequent cyclisation, 3371
Cycloalkanols
intramolecular cyclizations of some 3-arene sulfonyl – derivs, 6827
Cycloalkenes
cycloalkenylmethyleneoxazolones, synth by intermolecular transfer of an alkenyl group in enamines, subsequent cyclisation to [*b*]-fused pyridines, 8871
3-cycloalkenyloxy chromone, photoirradiation of, synth of spiropyrans, 8913
Cycloalkynes
3,4-didehydro-2,2,6,8-tetramethyl-2*H*-[1]benzopyran, generation, trapping, 1313
Cyclobutanes
α-bromocyclobutanecarboxylate, rearrangement to 1-(hydroxymethyl)cyclopropanecarboxylic acid by reaction with potassium hydroxide or carbonate, 623
cyclobutylfluorocarbene, kinetic isotope effect in 1,2-H shift, 1929
formation by intramolecular photochemical [2+2] cycloadditions, biradical conformation control, 1641
fused – by intramolecular photochemical [2+2] cycloadditions, biradical conformation control, 1641
fused –, synth by alkylaluminium chloride promoted cycloadditions of styrenes to 1,4-naphthoquinones, 9397
halogenated dimethylenecyclobutane and methylenecyclobutene derivs, thermal rearrangements of, synth of styrene derivs, 5099
(±)-lubiminol, spirovetivane phytoalexin, synth by rearrangement of cyclobutyl carbinyl precursor, 8703
in spiro compd synth by photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones, 3521
synth by intramolecular [2+2] photocycloaddition of 6-alkenyl-2,3-dihydro-4-pyrones; rearrangement of the products, 1663
4,5,10,11-tetramethylheptacyclo[8.2.1.1^{2,5}.1^{4,7}.1^{8,11}.0^{1,8}.0^{2,7}]hexadecane: DSC, MM2 and ^{1}H NMR study of its [2+2]retrocycloaddition to an isomeric diene, 8601, 8605
Cyclobutanones
asymmetric Baeyer-Villiger oxidation of – using Sharpless epoxidation conditions, 7583
free radical expansion of – with sequential Grob fragmentation for synth of medium and large cyclic ketones, 957
Cyclobutenes
cis-1,2-disubstituted 3-cyclobutenes, heating of leads to (*Z,E*)-dienes corresponding to outward conrotation for nitrogen substituents, 7745
fused –, formation from alkylaluminium chloride catalyzed cycloadditions of styrenes to 2-bromo-1,4-naphthoquinone, 9397
fused –, intramolecular photocyclization forming homosecohexaprismane derivs, 8779
fused cyclobutenomaleimides, reactive dienophiles for molrac construction by cycloaddition with cyclic dienes, 3773
halogenated dimethylenecyclobutane and methylenecyclobutene derivs, thermal rearrangements of, synth of styrene derivs, 5099
Cyclobutenols
benzocyclobutenols, electron-transfer induced electrocycloreversion of, generation of *o*-quinodimethane intermediates which tautomerise to benzophenones, 5547
Cyclodextrins
acyl migrations in a glycophane (cyclodextrin-cyclophane hybrid), 5011
bridged β-cyclodextrin dimers by transformation of 6-monoazido-6-monodeoxy-β-cyclodextrins *via* phosphinimines, 4011
complexation with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, no distinction between host and guest, 7433
β-cyclodextrin borate, catalyst for oxygenation of alkenes by t-BuOOH, 3581
cyclodextrin-bis-imidazole enzyme mimic as catalyst for intramolecular aldol condensation of a dialdehyde carrying a t-butylphenyl group, 2541
cyclodextrins *via* the per-6-bromo-6-deoxy-CD, perfacial functionalisation of α, β and γCD employing a Vilsmeier-Haack reagent, 4647
deformed cyclodextrins, dependence of guest-binding ability on cavity shape, 1825
6^{A},6^{D}-di-*O*-(*p,p'*-biphenyldisulfonyl)-β-cyclodextrin, specific cleavage of the glucose-wall of by Taka-amylase A, synth of a cyclic compds composed of glucoses and biphenyl, 4035
diazirine within the cavities of α-, β- and γ-cyclodextrin, generation of 2-methylcyclo-

hexanylidene by photolysis of, 3235
2,3-di(mannoepoxido)-β–, formation of diimidazolyl dideoxy –, conformation, NMR, 7561
enantiomer separation of diene-$Fe(CO)_3$ complexes by HPLC on cyclodextrin-bonded stationary phase, 2405
heptakis-6-amino-6-deoxy-β–, catalyst for H/D exchange in malonic acid, pyruvic acid and acetaldehyde, kinetics, 8963
mono-6-hydroxy permethylated β–, synth *via* t-butyldimethylsilylation, 6831
permethylated β–, 2:1 binding with *meso*-tetra-(4-carboxyphenyl)porphyrin Na salt in water, NMR, UV, fluorescence, 8019
selective 3-benzylation by 6-silylation and reaction with *N*-methyl-4-chloromethyl–2-nitroaniline, NMR of product and of 2- and 6-isomers, 8309

Cycloheptenes
cycloheptenone carbon skeleton of manicol, antineoplastic sesquiterpene from the root bark of *Dulacia guianensis*, synth from (*R*)-perillaldehyde, 525

Cyclohexanes
2-amino(sulfonamido)cyclohexanes as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
chiral cyclohexane intermediate to the (–)-tetrodotoxin skeleton, synth by electrocyclisation of triene derivs, 8199
trans-1,2-cyclohexanedicarboxylic acid derivs as pH-triggers for conformationally controlled crowns, 3981
6,6-dimethyl-5-iodo-2,2-diphenyl-1-oxa-2-silacyclohexane, synth by intramolecular iodosilyletherisation of 4-methyl-3-pentenyldiphenylsilanol, 6781
2-hydroxymethyl-4-methylenecyclohexanol by treatment of olefinic epoxy alcohol with diethylaluminium fluoride, new synth of dideoxycarbocyclic sugars, 3
lipase from *Candida rugosa* for separation of *cis*- and *trans*-4-substituted cyclohexanecarboxylates, 9029
methyl 2,2,6,6-tetramethoxybicyclo[2.2.0]hexane-1-carboxylates, oxidative scission by RuO_4, 527
2-methylcyclohexanylidene, generation from the corresponding diazirine within the cavities of α-, β- and γ-cyclodextrin by photolysis, 3235

Cyclohexanones
t-butylcyclohexanone, reduction by lithium aluminium hydride, importance of entropy in stereoselection, 2185
(+)-cordiaquinone B, merosesquiterpenoid quinone with 3-substituted 2,3,4-trimethylcyclohexanone framework from root of *Cordia corymbosa*, synth, 7075
from palladium chloride mediated Ferrier rearrangement of 6-deoxyhex-5-enopyranosides, 649
2-methylene –, formation by Tl(III) trifluoroacetate ring expansion of 1-vinyl cyclopentanol trimethylsilyl ethers, 3865
4-substituted cyclohexanones, catalytic asymmetric deprotonation of by employing bidentate chiral amine in the presence of a tridentate achiral lithium amide, 8191

Cyclohexenols
(+)-epiepoxydon and (–)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499

Cyclohexenones
asymmetric synth by conversion of arenes *via* nucleophilic addition to arene-$Cr(CO)_3$ complexes, 3087, 3089
homochiral 4-benzamido 2-cyclohexenone, methylene-addition to the carbonyl and intramolecular oxirane-ring opening, synth of 3a,4,5,7a-tetrahydrobenzoxazole derivs, 4059
3-nitro-2-cyclohexenone, photochemistry of, 3939
reductive amination of substituted – with sodium triacyloxyborohydrides, synth of protected axial amines, application to prep of 3-*endo*-tropanamine, 3977

Cyclooctanes
asteriscanolide, cyclooctane sesquiterpene from *Asteriscus aquaticus* L., intramolecular [2+2] photocycloaddition-fragmentation approach to synth of, 2177

Cyclooctenes
1,2,3-cyclooctatriene, generation and trapping, strain calculations, 4907

Cyclopentadienes
1,2,3-trisubstituted –, synth from zirconacyclopentenes, 7521

Cyclopentanes
(+)-brefeldin A, approach *via* Ni-catalyzed coupling of cyclopentenyl acetate and lithium 2-furylborate, 6125
caged cyclopentylidenecarbene, synth as intermediate in reaction of 8-(dibromomethylene)-pentacyclo[$4.4.0.0^{2,6}.0^{3,10}.0^{5,9}$]undecane and -undecan-8-one with n-BuLi-THF and DAMP, 467

trans-1,2-cyclopentanediyl-2,2'-biphenol by di-selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides with samarium(II) iodide/HMPA, 8505
cyclopentanoids by sequential nucleophilic and electrophilic alkylations of 1,3-dicarbonyl compds with a trimethylenemethane zwitterion equivalent leading to [3+2] annulation, 471
Lewis acid-catalyzed formation from 1,4:2,3-diepoxycyclohexane derivs, 2877
methylcyclopentane triols and tetrols from hexoses using Grob cleavage and SmI_2 cyclization, 1305
1-methylene-2-alkenylcyclopentane derivs, by Ti-mediated cyclization of nona-1,3-dien-8-ynes, 1253
methylenecyclopentane annulation *via* [3+2] cycloaddition reaction of 1-(alkylthio)-2-(trimethylsilylmethyl)allyl esters, 5943
trienic cyclopentane derivs, synth by electrocyclic opening of dibromocyclopropane derivs containing a tethered diene unit, 439

Cyclopentanols
Ni-promoted reductive cyclization of dienyl aldehydes to −, effect of added diene, 887
phenoxy- and acetoxy- 6-iodo-6-deoxyglycosides into methylcyclopentanols using SmI_2, 5817

Cyclopentanones
dihydro-12-oxophytodienoic acid and jasmonic acid, synth of homologues by mixed Kolbe electrolysis, 8715
intramolecular acylations with dienyl acyl chloride $Fe(CO)_3$ complexes, formation of alkenylidene cyclopentanones and vinyl cyclopentenone $Fe(CO)_3$ complexes, 8763
2-methylene −, formation by Tl(III) trifluoroacetate ring expansion of 1-vinyl cyclobutanol trimethylsilyl ethers, 3865
synth by acid-catalyzed rearrangement of 1-ethoxy-3-oxabicyclo[3.2.0]heptanes, 2073

Cyclopentenes
4-amidocyclopent-2-enecarboxamides,*cis*-dihydroxylation by OsO_4/NMMO, unexpected stereoselectivity, 4601
2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, synth and use in prep of vinyl cyclopropane carboxylic acids, 7119, 7123
2-silyloxycyclopentenecarboxylates, addition of Grignard reagents to, synth of 5-substituted-2-hydroxycyclopentanecarboxylates after desilylation, 6323

Cyclopentenones
3-alkylamino-2-hydroxy-4-hydroxymethyl-2-cyclopenten-1-one (cypentodine), formation by dehydration of a 4,5-di-*O*-tosyl Amadori product, 4667
α-allyl-α-carboxy-γ-lactones, base-promoted cyclization to − *vs* 1,2-ester group migration, effect of substituents, 3199
bis(silylvinyl) −, synth from 1,6-bistrimethylsilylhexa-1,5-dien-3-yne and substituted acryloyl chlorides/$AlCl_3$, 8455
(*R*)-(+)-4-t-butyldimethylsilyloxy-2-cyclopenten-1-one, improved synth, 3083
by condensation of alkyne, alkene, and CO using catalytic $Co(acac)_2/NaBH_4$, 3145
2-carbomethoxycyclopentenone,enantioselective Mukaiyama-Michael reactions of catalysed by chiral bis(oxazoline)-Cu(II) complexes, 8921
4-hydroxy-cyclopent-2-en-1-ones by Horner-Wadsworth-Emmons olefination of 1,2-diketones, 1899
intramolecular acylations with dienyl acyl chloride $Fe(CO)_3$ complexes, formation of alkenylidene cyclopentanones and vinyl cyclopentenone $Fe(CO)_3$ complexes, 8763
racemic 4-t-butoxy-2-cyclopentenone, starting material for synth of (+)-estrone, an estrogenic steroid hormone, 7403
reaction of 3-ethoxycarbonylprop-2-enylidene triphenylphosphorane with glyoxals, *cis*-jasmone synth, 5735

Cyclophanes
acyl migrations in a glycophane (cyclodextrin-cyclophane hybrid), 5011
[4.4](1,3)-adamantanophane-*trans,trans*-diene, synth, conformation, 4829
a [2.2](3,3')biphenylo(3,6)phenanthrenophene, mixed [2.2]cyclophane formed by photocycloaddition, synth, NMR, UV,fluorescence, 3877
[8]-*m*-carboranophane, [8], [9] and [10]dithia-*m*-carboranophane and [8,8], [9,9] and [10,10]-tetrathiadicarboranophanes,synthandstructure, 7221
chiral − containing 4,4'-bipyridinium dication linked through two *p*-methylenebenzamido groups to various dipeptide units, synth and association constants with six π-donor analytes, 8313
chiral 1,4-naphthalenophane, conversion into chiral binaphthyl derivs, 2057
exciplex fluorescence of naphthalenes in the cavity of a diquaternary − in aqueous solution,

4833
furan-acetone cyclic hexamer, reaction with benzyne, *anti*-addition to 1,4- and 1,3-disposed rings forming bis-adducts with C_S symmetry, formation of furano-naphthalenophanes, 6201, 6205
furan/acetone cyclic oligomers, X-ray of hexamer, synth of nonamer, isolation and cyclization of linear oligomers, 4593
[2.2]para–, synth of homochiral amino-acids with amino and carboxy groups in different rings, 1273
2,6-pyridinophane with 11-membered loop containing two N atoms and an N-O bond, and other polyaza-pyridinophanes, synth, 7233
stilbenes and tolans with 8-membered unsaturated 2,6-bridge, π,π-interactions by UV, 4487
Stoddart's cyclobis(paraquat-*p*-phenylene) receptor for recognition of phenyl glycopyranoside and β anomer of phenyl glucosides, 263, 287
tetrakis and octakis(*m*-benzene-butadiyne)s, [4_4] and [8_4]metacyclophanes, synth and self-association, 9325
tetrathia 18, 20 and 22-membered dinaphthalene –, synth by $S_{RN}1$ reactions, 1603
triple-layered orthonaphtho[3.3]orthobenzeno-[3.3]orthonaphthophane, synth and structure, 65
2,8,17-trithia[$4^{5,12}$][9]metacyclophan-4-ene, a cyclophane with a tertiary olefin strapped across the face of a benzene ring, synth from isobutylene-α,γ,γ'-tricarboxylic acid, structure, 8125
4,17,30-trithia-[7_3](1,3,5)cyclophane, synth by coupling of propargylOTHP with 1,3,5-tribromobenzene followed by ring closure, bromination and reaction with Na_2S, 6255
2,8,14-trithio[15]-*m*- and *p*-phenylene crownophanes, Ag^+ selective receptors, 3495

Cyclopropanation
and addition reactions with nitroalkenes derived from (*R*)-2,3-isopropylidene glyceraldehyde, synth of *syn*-nitrocyclopropanes, 6307
allylic alcohols containing other olefinic groups, –, regioselection and enantioselection, use of chiral dioxaborolane auxiliary and glycosylated alcohol, 7925
asymmetric intramolecular – of a silyl enol ether, synth of phorbol CD ring skeleton, 2449
of bicyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one using ethyl dimethylsulfonioacetate ylid, 8637
bis-oxazoline ligands for asymmetric Cu-catalyzed cyclopropanation and aziridination of olefins, 6189
of 1,1-bismethylthio-1,3,5-trien-7-ones by dimethyloxosulfonium methylide, 3565
– by diarylcarbene cation radicals of olefins, stereospecificity, 4927
Cu(I)-catalysed – of olefins using new bis-oxazoline ligands based on valine, 4073
cyclopropanation of unsaturated peptoids on solid support, generation of libraries of constrained cyclic peptoids, 6247
2-(dimethylphenylsilyl)alk-3-en-1-ols,asymmetric induction in –, 1205
enantioselective – of styrenes by methyl phenyldiazoacetate catalyzed by dirhodium prolinates, 4129
monosubstituted ethenes, – by methyl phenyldiazoacetate catalyzed by dirhodium prolinates, 4133
of unsaturated sugars with ethyl diazoacetate and a metal catalyst, synth of ester-substituted 1,2-*C*-methylene carbohydrates, subsequent ring-opening provides C-2 branched glycosyl bromides, 2533, corrig. 3217
of olefins by reaction with ethyl diazoacetate in the presence of $[OsCl_2(p\text{-cymene})]_2$, 1025
perhydrocyclopropa[*a*]pyrrolizin-2-ones by metal-catalyzed α-diazo-amide cyclization, 6523
polycyclopropane formation, stereoselectivity in – using dimethylsulfoxonium methylide and zinc carbenoids, 8341
tandem cyclopropanation/Cope rearrangement sequence for synth of the tremulane skeleton, 3967
– of chiral *N*-tosylnorgranatanone silyl enol ether, synth of pinidine, 4987

Cyclopropanes
1-acyl-2-alkenylcyclopropanecarboxylates,formation from 6*H*-pyran-3-carboxylates on reaction with arsonium ylids, 9349
(±)-(*Z*)-2-aminomethyl-1-phenylcyclopropane-*N,N*-diethylcarboxamide ((±)-milnacipran), synth of (+)- and (−)-milnaciprans, 641
2-t-butylcyclopropyl-3*H*-diazirine, thermal and photochemical decomposition, trapping by tetramethylethylene,formationof3-t-butylcyclobutene not *via* carbene, 8337
cyclopropanone acetal, photoinduced electron transfer reactions of – with conjugated enones in the presence of a redox-type photosensitiser, 1833
cyclopropyl carbaldehydes, ketones, stereochemistry of nucleophilic addition, 221

cyclopropyl methyl carbene, formation of vinylcyclopropane; methylcyclobutene arises through precursor to the carbene, 8333
cyclopropylmethyl silanes, mercuri-desilylation with ring opening, formation of homoallylmercury compds, stereochemistry, 1209
3-cyclopropylpropanoylpyrazine, photochemistry, a radical clock to probe biradical lifetimes, 8629
gem-dibromo–, dialkylation with trialkylmanganate, $MnCl_2$-catalyzed reaction with RMgBr, 5377
dibromocyclopropane derivs containing a tethered diene unit, electrocyclic opening of, synth of trienic cyclopentane derivs, 439
gem-difluorocyclopropanes substituted with an electron withdrawing group, synth by reaction of *gem*-dichlorocyclopropanes with tetra-n-butylammonium fluoride trihydrate, 4085
1,1-dihalocyclopropanes, hydrodehalogenation of by reaction with ethyl magnesium bromide and titanium isopropoxide, 8933
2,2-dimethylcyclopropanone silyl acetal, irradiation of a solution containing 1,1-dicyano-2-phenylethene or 1,2,4,5-tetracyanobenzene with – in the presence of phenanthrene, introduction of a C_3 unit, 2975
2,3-*cis*-disubstituted 1,1-dibromo- and 1-bromocyclopropanes, intermolecular radical additions of to electron-deficient olefins, 1837
electron deficient alkylidene cyclopropanes, palladium(0) catalysed intermolecular reaction with olefins, synth of functionalised skipped diene units, 5983
ethyl 2,2-dimethoxycyclopropane-1-carboxylates, oxidative scission by RuO_4, 527
cis-2-fluoro-cyclopropane-1-carboxylic acid, synth from t-butyl acrylate and chloromethyl phenyl sulfoxide, 8507
fused –, dimethyldioxirane oxidation, formation of keto groups in the larger ring, 5363
glycine Schiff base cycloadditions with crotonate and 4-bromocrotonate, synth of pyrrolidines and cyclopropanes, and of CCG-II, 2857, corrig. 5027
hydrolysis of 2-hydroxymethyl-1-phenylcyclopropane-1-carboxylic acid lactone by fungal cell cultures, 4519
2'-hydroxyethylcyclopropyl carbocyclic nucleosides from D-mannitol, 8849
2,3-methanopipecolic acid, chiral synth, 4529
2-methoxy-1-benzenesulfonyl-2-methoxy–, acid-catalyzed ring-opening to β'-benzenesulfonyl-αβ-unsaturated ketones, 9305
phenylcyclopropane cation radical, generation and rates for its nucleophilic capture, 1841
role of – as activating groups in oxidations by RuO_4 generated *in situ*, 2425
spirocyclopropane sugars, synth and application to formation of tertiary chiral centres: route to 2,2'-dialkylated pyranose subunit of lasonolide A, 8617
vinyl cyclopropane carboxylic acids, synth from 2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, 7119, 7123
vinylcyclopropanes bearing an ester group in the β-position, exposure to pentacarbonyl iron at elevated temperatures, study of steric and electronic factors, 357
vinylcyclopropanes, treatment with CO in the presence of Bu_3SnH and AIBN leading to stannylformylation *via* a cyclopropylcarbinyl radical opening to a homoallylic radical, 6729

Cyclopropanols
chiral *N*-tosylnorgranatanone silyl enol ether, cyclopropanation and $PhI(OAc)_2$ cleavage of – to unsaturated ester, 4987

Cyclopropenes
cyclopropene carboxylic acid allylic esters, intramolecular photocycloaddition of, formation of 5-oxaspiro[2,4]hept-4-ones, 8879
fluoro- dimer from attempted synth of 2-(trimethylsilylmethyl)-3,3-difluoroallyl trimethylsilyl ether, 5401

Cytotoxins
activity of analogues of cyclodepsipeptide didemnin B, 311
amphidinolide Q, cytotoxic 12-membered macrolide from cultured marine dinoflagellate *Amphidinium* sp., structure, 1449
auripyrones A and B, cytotoxic polypropionates from the sea hare *Dolabella auricularia*, structures, 5151
batzelline C, isobatzelline C, discorhabdin C and makaluvamine D, cytotoxic marine alkaloids and inhibitors of topoisomerase, synth from 6,7-dimethoxy-4-methyl-5-nitroquinoline, 1509
curacin A, cytotoxic agent from the cyanobacterium *Lyngbya majuscula*, total synth involving Julia coupling, Wittig reaction and dehydrative cyclisation, 953
cytotoxic enediyne estrogen conjugates, synth involving Mitsunobu coupling of the desired phenol with alcohol, 3643

epothilon A and B, cytotoxic macrolides from *Sorangium-cellulosum* culture So ce901, synth of the C1-C9 segment from methyl 3-hydroxy-(2*S*)-methylpropionate, 9179
(+)-favelanone, tetracyclic dione active against P-388 murine leukemia cells from the Brazilian plant Favela *Cnidoscolus phyllacanthus*, synth from6-methoxy-5-methyl-3-trimethylsilyloxyisobenzofuran-1-carbonitrile, 6797
(+)-goniodiol, cytotoxic styryl lactone isolated from several *Goniothalamus* species, total synth from α-(α'-alkoxyallenic) alcohol, 371
(+)-goniofufurone and goniobutenolides A and B, cytotoxic styryl lactones from stem bark of *Goniothalamus giganteus*, synth from (*R*)-(−)-mandelic acid *via* a β-hydroxy sulfone, 4373
incrustasterol A and B, cytotoxic polyoxygenated steroids from marine sponge *Dysidea incrustans*, synth, 4775
lagunapyrones A-C, cytotoxic acetogenic α-pyrones from unidentified marine sediment bacterium, structures, 1327
lasonolide A, cytotoxic macrolide from Caribbean marine sponge *Forcepia* sp., synth of the 2,2'-dialkylated pyranose subunit of from spirocyclopropane sugars, 8617
Manzamine A, cytotoxic alkaloid, synth *via* isoquinoline derivs derived from (*Z*)-enol ethers, 7019
manzamine A, polycyclic alkaloid with cytotoxic, antileukemic and antibacterial activities, construction of the tricyclic ABC ring subunit, 7365
(+)-octalactin A, cytotoxic lactone natural product, synth of two key intermediates to, 5049
penostatins, cytotoxic metabolites from *Penicillium* sp. separated from marine alga *Enteromorpha intestinalis*, structure elucidation and cytotoxic activity against P388 cells, 655
(+)-ptilocaulin, cytotoxic against L 1210 leukemia cells, originally isolated from the Caribbean sponge *Ptilocaulis aff. P.spiculifer*, synth, 5091
rhopaloic acid A, norsesterterpene from marine sponge *Rhopaloeides* sp., cytotoxic against human myeloid K-562 cells, human MOLT-4 leukemia cells and murine L1210 leukemia cells, structure, 2265
ritterazine A, a cytotoxic dimeric steroid from the tunicate *Ritterella tokioka*, determination of orientation of the steroidal units by ^{15}N-HMBC NMR, 1447
roseophilin, ansa bridged 1-azafulvene with cytotoxic activity, synth of bicyclic core of from δ-(sulfonylamino)-α-epoxy ketones, 2545
spongistatin 1, cytotoxic macrolide from *Spongia, Spirastrella, Hyrtios* and *Cinachyra* genus, synth of the AB-spiroacetal subunit from 3-benzyloxypropanal, 8581
suberosenone, cytotoxic sesquiterpene from gorgonian *Subergorgia suberosa*, structure and cytotoxic activity, 3259
taxanes, 2'-*epi*-taxol, synth from natural Taxol® by formation of oxazoline on the side chain with concomitant inversion of the C-2' followed by hydrolysis, 4785
vallartanone B, a γ-pyrone-containing polypropionate from marine mollusc *Siphonaria maura*, synth and structure, 4749
zapanolide, 20-membered macrolide from marine sponge *Fasciospongia rimosa*, isolation and structure, 5535

Dealkylation

of monooxides of 2,2'-bis(alkylthio)biphenyl by treatment with triflic anhydride, synth of the corresponding thiasulfonium salts, 667

Deamination

aromatic amines, − by NO, 4165
reductive cyclodeamination of 5-nitro-6-cyanomethylpyrimidine derivs, synth of pyrrolo[3,2-*d*]-pyrimidines (9-deazaguanines), 5829

Decarbonylation

of imidazo-2-yl and pyid-2-ylpyruvic acids by sodium perborate at room temperature, synth of the corresponding acetic acids, 1901
photo− of 2-phenyl-4-alkylidene-5(4*H*)-oxazolones, 4019
of α-tertiary amino acids obtained from D,L-pipecolic acid, application to synth of polyhydroxylated indolizidines, 5581

Decarboxylation

α-acetylamino-α-alkynylmalonic half-esters, involvement of acetylene group, 861

Deconjugation

of αβ-unsaturated esters, stereochemistry, role of base and solvent, 5261

Degradation

oxidative − of larixol and larixyl acetate, constituents of the oleoresins of *Larix* species, 4705
C-terminal − of peptides *via* oxazolone cyclization using ethyl chloroformate, then alcoholic HCl, 7557

Dehalogenation

hydrodehalogenation of 1,1-dihalocyclopropanes

by reaction with ethyl magnesium bromide and titanium isopropoxide, 8933
metallic samarium for reductive halogenation of aliphatic *vic*-dihalides, 9313
photosensitized defluorination of perfluorodecalin, role of perfluorooctalin in arenethiolate defluorination/aromatization, 2373
primary alkyl halides to alkenes using triisopropylsilanol as a phase transfer catalyst, 2561
removal of bromide and iodide groups in halobenzoic acids and other substrates by hypophosphorous acid in water, 5367

Dehydration
cyclodehydration of β-hydroxy amides and thioamides using PEG-supported Burgess reagent, synth of oxazolines and thiazolines, 4659
of a 4,5-di-*O*-tosyl Amadori product, formation of 3-alkylamino-2-hydroxy-4-hydroxymethyl-2-cyclopenten-1-one (cypentodine), 4667
of substituted tosylmethyl formamides, synth of substituted tosylmethyl isocyanides, 8113

Dehydrogenation
of bicyclic cyclohexanones to enones and dienones using superelectrophilic trichloromethyl cation as a strong hydride acceptor, 7731
α-hydrazinonitriles, Pd-catalyzed – using cyclopentene, formation of hydrazidoyl cyanides, 8771

Dendrimers
asymmetric dihydroxylation of stilbene units in – synth with chiral internal structure, 6077
metal coordination to assemble hyperbranched structures of 1,10-phenanthroline ligands with branched groups at 3,8-positions, 8293
phosphorus-containing – with *N*-allyl and *N*-diphenylphosphinomethyl terminal groups on generations 1-7 around a triphosphazene nucleus, 9053
(L)-tartrate-derived optically active dendritic fragments, prep by convergent approach and chiroptical properties of, 5935

Deoxygenation
Barton-McCombie –, *C*-arylation of a gibberellin on attempted radical –, 4255

Deprotonation
catalytic asymmetric – of 4-substituted cyclohexanones by employing bidentate chiral amine in the presence of a tridentate achiral lithium amide, 8191
of *N,N*-dihexyl-1-naphthamides, synth of *N,N*-di hexyl-2-alkyl-1-naphthamides, 2899
of trifluoromethyl thioamidium salts, generation of trifluoromethyl azomethine ylids, 5515
vinylic *vs* allylic deprotonation; ***ab initio*** molecular orbital study of 2,3-dihydrooxepin and 1,3-cycloheptadiene, 9127

Depsipeptides
A83586C, azinothricin antibiotic cyclo–, construction of the northern sector, 4233
antibiotic A3586C, asymmetric synth of entire backbone, 9345
antifungal cyclic – Sch 57 697 and aureobasidin A, synth, 5661
aureobasidin A, cyclic –, site-specific ring opening in HF, 2043
aurilide, cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia*, isolation and stereostructure, 6771
didemnin B, synth of three side chain analogues of, cytotoxic activity, 311
dolastatin G, nordolastatin G, 35-membered cyclic –, synth, 7299
hapalosin, cyclic – combating drug resistance, synth, 3467
haplosin and 8-deoxyhaplosin, 12-membered cyclic –, synth, 6557
micropeptin 90, a cyclic depsipeptide from the cyanobacterium *Microcystis aeruginosa* (NIES-90), structure, 9225
nostocyclin3-amino-6-hydroxy-2-piperidone-containing cyclic peptide from hepatoxic strain of cyanobacterium *Nostoc* sp., structure and biological activity, 6725
pithomycolide, cyclic –, synth, 6479
pristinamycin I_A, cyclic –, electrochemical reduction, effect of macrocycle ring-opening, 7499

Desulfurisation
sultones, – with simultaneous methylenation, 3841

Diamides
enhanced intramolecular amide-amide hydrogen bonding through cooperativity, 2189
from benzylic phosphonothioic dichlorides by nucleophilic substitution, 8247

Diamines
C_2-symmetrical diaminoferrocenyl derivs as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
diamines and a C_2 symmetric triamine, synth from (*R*)-styrene oxide, 5619
α,ω-diaminoitols, synth from unprotected pentitols and erythritol by successive treatment with thionyl chloride and sodium azide followed by catalytic hydrogen transfer, 3683
(–)-halicyclamine B, tetracyclic diamine from the

sponge *Xestospongia* sp., structure and biogenetic origin, 9151
homopiperazine, reaction with $BrBH_2$, synth of isostere of tropanium salt, 2729
medium-size monocyclic diamines based on a 1,6-diazacyclodecane core and bearing either nitrophenyl acceptor and methoxyphenyl donor groups or two donor or acceptor groups, 4721
O-phenylenediamine, reaction with β-methoxyvinyl trichloromethyl ketones derived from acetals, synth of 2-trichloromethyl-4-aryl-3*H*-1,5-benzodiazepines, 9155
SnX_2-chiral diamine complex as catalyst for nonenzymatic enantioselective acylation of racemic secondary alcohols, 8543
synth of 1,2,5-thiadiazolidine 1,1-dioxides and 1,2-diaryl ethylenediamines by dibenzylidene sulfamide intramolecular coupling, 2859

Diastereoselection

addition of Grignard reagents to masked imines and iminium ions - 4,10-dioxatricyclo[5.2.1.$0^{2,6}$]-dec-8-en-3-amines, 8729
addition of silyl enolates to imines derived from (*S*)-valine methyl ester catalyzed by lanthanide triflate, 1691
alkenylcyclohexadienyl-$Fe(CO)_3$ and -$Fe(CO)_2PPh_3$, conjugate addition of nucleophiles, long-range asymmetric induction, 9009
alkylation of enolate dianion of (*S*)-4-carbethoxymethyl-2-oxazolidinone, 5723
4-amidocyclopent-2-enecarboxamides, *cis*-dihydroxylation by OsO_4/NMMO, unexpected stereoselectivity, 4601
2-amino-1-cyclohexyl-6-methylheptane-3,4-diol, synth from L-phenylalanine, 1961
(*S*)-aminomethyl butanedioic acid, synth using oxazolidinone chiral auxiliary, 4277
2-aryloxy acids from lactamide-derived esters of racemic α-halocarboxylic acids, 2683
asymmetric conjugate allylation of *N*-(8-arylmenthyloxycarbonyl) 2,3-dihydro-4-pyridones catalyzed by $TiCl_4$, importance of aryl group to − by π-stacking effect, 9063
asymmetric Diels-Alder reactions of sulfinylbutadienes derived from 3-mercaptobornan-2-ol, effect of various Lewis acids, 4537
asymmetric dihydroxylation of chiral γ-amino-αβ-unsaturated esters, tuning protective groups from mismatched to matched cases, 9293
benzyl glyoxylate (+)-1-phenylethylimine, aza-Diels-Alder reaction with cyclopentadiene and cyclohexadiene, 7577
camphor-derived imidazolidinone auxiliaries for asymmetric aldol reactions, opposite diastereoselectivity using Ti and Li enolates, 6931
catalytic 18-crown-6 in stereospecific synth of (*Z*)- and (*E*)-stilbenes by crown ether catalyzed Wittig reactions in solid-liquid two phase system, 4225
complex hydride reduction of *N*-(2-hydroxy-2-phenylethyl)-*N*-(3-oxo-3-phenylpropyl)-benzylamine, bicyclic chelate structures controlling −, 7897
conformationally constrained chiral Cu-bis-(oxazoline) catalyst in Diels-Alder reactions, 3815
cycloaddition of penta-1,5-dien-3-ynes with two molecules of dienophile, stereochemistry, mechanism, 1559
cyclopropyl carbaldehydes, ketones, stereochemistry of nucleophilic addition, 221
exo-2,3-diaminobornane–derived imidazolidinone as chiral auxiliary for enolate alkylations, 4565
diastereofacial selectivity of 6- and 7-substituted dihydrooxepinones and 7-substituted dihydroazepinone in addition to enone moieties, 633
diastereoselective Rh-catalyzed hydroformylation of protected allylic alcohols, 6877
of Diels-Alder reaction of η^6-(4'-methylbenzyl 2-*O*-acryloyl-3,4-*O*-isopropylidene-β-L-arabinopyranoside)tricarbonylchromium(0), 3713
Diels-Alder reactions of *N*-t-butyloxycarbonyl-3-*p*-toluenesulfinylbenzoquinone-4-imine, 3187
2,3-dihydro-4*H*-1,3-benzoxazin-4-one, chiral deriv from *l*-menthone, synth and use as chiral auxiliary in aldol reaction, 3129
2-(dimethylphenylsilyl)alk-3-en-1-ols, asymmetric induction in epoxidation and cyclopropanation reactions, 1205
diphenylphosphinoyl lactones in the control of remote stereochemistry, 2105
epoxidation and kinetic resolution of *cis/trans*-2,6-dimethylbenzylidene cyclohexane, 8447
π-facial selectivity in electrophilic additions and cycloadditions to bicyclo[2.2.2]oct-2-enes with 5,6-*cis*-*exo*-substituted electron withdrawing groups, 1321
formation of both enantiomers by chiral borane-mediated aldol reaction with chiral aldehydes, 2597
intramolecular hydrosilation forming spirocyclic siloxanes, sources of Si-based Lewis acids, 827
mercuri-desilylation with ring opening of cyclopropylmethyl silanes, formation of homoallyl-

mercury compds, stereochemistry, 1209
methoxy-selenenylation of allylic alcohols and derivs, 1249
(-)-2-(methoxy-1-phenylethyl)-2-t-butyldimethylsilyloxy-pyrroles, addition at C-5 of aldehydes and αβ-unsaturated carbonyl compds, stereochemistry, 1213
perhydro-oxazolo[3,2-*a*]pyridines in asymmetric synth of 2-alkylpiperidines, 849
polycyclopropane formation, − in cyclopropanation using dimethylsulfoxonium methylide and zinc carbenoids, 8341
reagent-controlled diastereoselectivity in aziridination of alkenes by chiral 3-acetoxy-amino-3,4-dihydroquinazolin-4-ones, 5179
reduction of β-ketoesters by baker's yeast in petrol, 1699
reduction of α,α,α-trifluoro-α'-sulfenyl ketones by various microorganisms, 3903
ring-opening of *meso*-dicarboxylic anhydrides, reversal of diastereodivergence, 9237
stereocontrolled prep of cyclopentanones by synth and rearrangement of 1-ethoxy-3-oxa-bicyclo[3.2.0]heptanes, 2073
stereoselectivity arising from charge interaction in synth of carbacyclin analogues, 4141
stereoselectivity in photocycloaddition of methyl trimethylpyruvate to 2,2-diisopropyl-1,3-dioxole, 1195
N-sulfinyl imines, diastereofacial selectivity in addition of ester enolates, 3881
synth of nucleoside methylphosphonate methyl ester diastereomers, 4853
use of 2-oxoimidazolidine-4-carboxylate as chiral auxiliary, synth of α-amino acids, 4957
see also Stereoselection

Diastereoselectivity
dipeptide esters, − of hydrolysis, pH and temperature effects, 3461

Diaza compds
dibenzo-diaza-crown ethers, synth involving the 1:1-cyclocondensation of α,ω-contrafunctional amines, 2213
medium-size monocyclic diamines based on a 1,6-diazacyclodecane core and bearing either nitrophenyl acceptor and methoxyphenyl donor groups or two donor or acceptor groups, 4721
rigidly-linked 4,5-diazafluorenes, new molrac bidentate ligand systems, synth by 1,3-dipolar cycloaddition of 9-diazo-4,5-diazafluorene onto the π-bond of the molrac, 2157, 2161

Diazenes
reductive transposition of allylic alcohols to alkenes *via* *o*-nitrobenzenesulfonylhydrazines and diazenes, 4841

Diazepines
1,4-diazepane-2,3-diones, synth as HIV-1 aspartic protease inhibitors, 1153
2,3-dihydro-1,4-diazepines and 1*H*-1,5-benzodiazepines containing CF_3 groups, synth, 2845
8,8-dimethyl-2,6-diphenyl-3,5-diazabicyclo[5.1.0]octa-2,5-diene-4,4-dicarbonitrile, 1587
pyrazino[2,3-*e*][1,4]diazepine derivs, synth from 3-aminopyrazine-2-carboxylic acid and α-amino acid esters *via* intramolecular aza-Wittig reaction, 81

Diazirines
2-azi-camphane, sterically congested diazirine, synth from camphor, 6647
2-t-butylcyclopropyl-3*H*-diazirine, thermal and photochemical decomposition, trapping by tetramethylethylene, formation of 3-t-butylcyclobutene not *via* carbene, 8337

Diazo compds
alkyldiazoacetates, reaction with hexahydro-1,3,5-triazines in the presence of tin(IV) chloride, synth of aziridine-2-carboxylates, 7069
alkyldiazomethanes, conformational effects on 1,2-hydrogen migration in excited state, 7209
chiral ester diazoanilides, Rh-catalyzed insertion into C-H bonds, 145
diazirine, generation of 2-methylcyclohexanylidene from − within the cavities of α-, β- and γ-cyclodextrin by photolysis, 3235
diazocarbonyl compds, $RuCl_2(PPh_3)_3$-catalyzed insertion of derived carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
α-diazomalonic ester deriv, intramolecular addition of carbenoid to amide carbonyl O, formation of 10-membered bicyclic imino-ether, 8035
5-diazotricyclo[5.1.0.$0^{1,3}$]hexan-4-one, a two-carbon bridged spiropentane, formation by diazo transfer using mesyl azide and photo-Wolff rearrangement, 8285
ethyl diazoacetate, reaction with olefins in the presence of $[OsCl_2(p\text{-cymene})]_2$, synth of cyclopropanes, 1025
glycine-derived diazo acetoacetamide, Rh(II)-catalysed decomposition of, ligand-dependent site selectivity in, 6981
methyl 5,5-diphenyl-2-diazo-3-oxopent-4-enoate, synth and acid-catalyzed and Wolff rearrangement with cyclization, forming isomeric methyl hydroxy-naphthoates, 8277
methyl3,3,3-trifluoro-2-diazopropionate, reaction

with amines and amides, formation of ammonium ylids which rearrange to α-trifluoromethyl-α-amino acids, 615
nitrobenzenediazonium derivs of moenomycin A as *in-vitro* transglycosylase inhibitors, synth, 5087
trimethylsilyldiazomethane for conversion of maleic anhydride moiety of cornexistin into diester, 1967
trimethylsilyldiazomethane, cycloaddition to 1-acetylvinyl carboxylates, high regioselectivity and ready aromatization of dihydroazole adducts, 6835
vinyl and *p*-methoxybenzyl diazomethane, synth and use for esterification of cephalosporin C-9 carboxylates, 1971

Diazo transfer
see Transfer reactions

Diazonium ions
Suzuki cross-coupling of arenediazonium tetrafluoroborates with arylboronic acids, 3857

Diels-Alder reactions
of 1-dialkyloxyphosphorylisobenzofuran, 5963
of 5-trimethylsilyl-2-furfuryl propargyl ethers followed by trimethylsilyl group 1,2-rearrangement and Brook rearrangement, 7395
of acrylate esters from monobenzylated isosorbide or isomannide and cyclopentadiene, 7023
of aminoheterocycles with formaldehyde and electron-rich alkenes, synth of cyclic amidine and isothiourea skeletons, 2615, 2619
aqueous aza – of an aldehyde and an amine hydrochloride catalysed by lanthanide(III) trifluoromethanesulfonates, 2169
asymmetric – of acrylimide and cyclopentadiene using bis(oxazoline) ligands, 1725
asymmetric – of sulfinylbutadienes derived from 3-mercaptobornan-2-ol, effect of various Lewis acids, 4537
between cyclopentadiene and 3-acryloyl-1,3-oxazolidin-2-one in the presence of catalytic amounts of (*R*)-2,2'-isopropylidene-bis(4-phenyl-2-oxazoline) and magnesium perchlorate, 3027
between diethyl ketovinylphosphonate and cyclopentadiene and *E*-1-acetoxy-1,3-butadiene or furan, 2149, 2153
N-t-butyloxycarbonyl-3-*p*-toluenesulfinylbenzoquinone-4-imine, synth and Diels-Alder reactivity, 3187
citral dienol acetate, – with benzoquinones, synth of 2-isoprenylmethyl naphthalene-5,8-diols, 8037
contra-steric addition of CPD to 4-t-butoxycyclopent-3-en-1-one, 205
π4s + π2s cycloaddition of allyl anion with ethylene, theoretical investigation of, 7679
cycloaddition of phenylcyclopentadienes to α-thioacrylonitriles, concerted reaction with radicaloid transition state favoured, 2417
of dicarboxylic ester-tethered trienes, formation of medium-ring diolides, 535
Diels-Alder/retro-Diels-Alder sequence for synth of 6,13-diisopropylidenetricyclo[9.3.0^{1,11}.0^{4,8}]-tetradeca-1(14),4,7,11-tetraene, 2517
of 1,3-dienylborate salts with activated dienophiles, synth of functionalised cyclic allylborates, 6699
2,4-dihydropyrrolo[3,4-*b*]indoles, – and retro– resulting in transfer of the C1-N2-C3 unit, 3487, corrig. 6959
enantioselective – of αβ-unsaturated *N*-acyloxazolidinones with cyclopentadiene catalyzed by chiral Cu complex, 3815
enantioselective – of bromoacrolein and cyclopentadiene using a chiral tartrate-derived dioxaborolidine catalyst, 2989
of enyne allenes, synth of benzofluorene and 10*H*-indeno[1,2-*g*]quinoline derivs, 999
of a functionalised (*E,E,E*)-cyclododeca-1,6,8-triene, key step in diastereoselective synth of the *trans-anti-cis*-decahydro-*as*-indacene ring system, 8065
hetero Diels-Alder reactions of C_{60} with 1,3-bis(t-butyldimethylsilyloxy)-2-aza-1,3-butadiene, synth of δ-valerolactam deriv of C_{60}, 9211
hetero-– of imines derived from tryptophan with 1-methoxy-3-silyloxybuta-1,3-dienes, synth of 2,3-dihydropyridin-4-ones, 2753
exo- – of homochiral 2-(*N*-acylamino)-1-thia-1,3-dienes, synth of optically pure thiopyrans, 123
of imines with alkenes using a chiral lanthanide Lewis acid, synth of tetrahydroquinoline derivs, 7357
intramolecular – for construction of the taxane A→ABC ring system and subsequent elaboration to a taxinine analogue, 8069
intramolecular – of pyrazines with an alkenyl side chain, formation of bridged tricyclic compds which undergo retro-Diels-Alder to yield the original pyrazines, 8205
intramolecular – in synth of 1,2,3,4,4a,5,6,8a-octahydronaphthalene portion of superstolides, 8989
intramolecular – of trisubstituted cyclopenta-

diene and subsequent elaboration of the C-ring, synth of (±)-pentalenene, a sesquiterpenoid originally isolated from *Streptomyces griseochromogene*, 89
inverse electron demand – of 3-substituted indoles with 1,2,4-triazines and 1,2,4,5-tetrazines, 5061
inverse electron demand – of polymer-supported 1,2,4,5-tetrazines, synth of functionalised 1,2-diazines bearing a sulfur-based leaving group, 8151
ionic – of the allyl cation and butadiene, theoretical investigation of the mechanism using *ab initio* RHF and MP2 calculations, 1759
of (*E*)-1-methoxy-2-methylamino-1,3-butadiene and the corresponding bis-dienes, 8169
(2*E*)-4-methoxy-2,4-pentadienamides, synth, reactivity in –, 3595
of η^6-(4'-methylbenzyl 2-*O*-acryloyl-3,4-*O*-isopropylidene-β-L-arabinopyranoside)tricarbonyl chromium(0) with isoprene, butadiene, cyclopentadiene and furan, 3713
1-naphthols, synth by benzyne route using –, 3097
of nickel(II) β-vinyl-*meso*-tetraphenylporphyrins with TCNE, 3569
niobium and tantalum complexes as Lewis acids in simple Diels-Alder reactions, 6011
of nonracemic 3- and 4-amino furans bound to polystyrene, comparison to their solution state analogues, 2133
of phenacyl sulfoxide bearing nitrogen-containing heterocycles with 2,3-dimethyl-1,3-butadiene, synth of 6-benzoyl-5,6-dihydro-3,4-dimethyl-2*H*-thiapyran, 3739
palladium(II) catalysed hetero Diels-Alder reaction of dienes with aldehydes, synth of 5,6-dihydro-2*H*-pyrans, 6351
1-phenoxy-2-trimethylsilyloxy-1,3-butadiene, synth and –, synth of cyclic silyl enol ethers and α-phenoxy-ketones, 6951
of 3-pyridine bismethylcarbamate, with 1,3-cyclohexadiene, synth of the rigid azabicyclic backbone of 3-(3-pyridyl)-2-azabicyclo[2.2.2]octane, 8841
of quinolono-*o*-quinodimethanes, synth of linearly fused and bridged multicyclic heterocycles, 7823
quinone – in synth of carbocyclic forskolin analogues, 3079
retro– in synth of (-)-2-oxobicyclo[3.1.0]hexane-6-carboxylic acid, 8637
α-silyloxy-silene addition to dienes, diastereoselectivity, 2491
substituted α- and β-fluoro styrenes and *p*-fluorostyrene, rate constants for – with diphenylisobenzofuran, 7251
in synth of E-ring of pentacyclic steroids, 2085
tandem – of DMAD to bi(cyclopenta-2,4-diene), theoretical study of reaction profile, 7573
type two intramolecular Diels-Alder reaction coupled with bridged to fused ring interchange as effective method for stereoselective formation of 5,7 fused ring systems, 949
tyrosinase in hydroxylation of phenols, oxidation and – reaction cascade, 3833
αβ-unsaturated *N,N*-dimethylhydrazones, cycloaddition to quinones on silica gel, dimethylamine addition to quinone side reaction avoided, synth of pyrido[3,2-*g*]quinoline-2,5,10-triones, 6955

Dienediynes

see Diynes

Dienes

acyclic enediynes, dienynes, dienediynes, by Pd-catalyzed hydrostannation and ene-yne couplings, 7971
alka-1,3-dien-2-yltitanium compds, synth from alka-2,3-dienyl carbonates, subsequent reactions with H^+ and I_2 to provide 1,3-dienes and 2-iodo-1,3-dienes, 8865
(2-aminohomodiene)tricarbonyliron(0) complexes by deprotonation and rearrangement of (1-heterodiene)tricarbonyliron(0) complexes, 691
(2*S*,3*S*,8*S*,9*S*)-3-amino-2,6,8-trimethyl-10-phenyl deca-4,6-dienoic acid (adda), microcystin constituent, synth of *N*-trifluoroacetyl methyl ester, 5645
asymmetric hydrosilylation of cyclic 1,3-dienes by $SiHCl_3$ catalyzed by chiral phosphine-Pd complex, 4169
bicyclo[4.4.1]undeca-2,4-diene and bicyclo[4.2.1]-nona-2,4-diene systems, studies on electrocyclisation in, 2553
1,1'-bicyclopentadiene derivs, synth by *endo-endo* intramolecular reductive cyclisation of a 1,4-diyne using lithium naphthalenide followed by oxidative coupling, crystal structure and UV spectra, 2983
1,6-bistrimethylsilylhexa-1,5-dien-3-yne, reaction with substituted acryloyl chlorides/$AlCl_3$, synth of bis(silylvinyl)cyclopentenones, 8455
1-(bromo-or iodo)-2-hydroxymethyl-1-(trimethylsilyl or -methyl)-1,3-butadienes, synth by vinyl

Grignard addition to propargyl alcohol derivs, 755
butadiene, reaction with allyl cation, theoretical investigation of the mechanism using *ab initio* RHF and MP2 calculations, 1759
1,3-butadiene, synth and separation of optically pure metabolites, 3,4-epoxybutane-1,2-diols, 7929
cascade carboalumination of 2-alkyl dienes and related trienes with Ti(IV) catalysis, synth of bicycloalkylmethyl alanes, 3803
cationic (η^5-4-methoxycyclohexadienyl)$Fe(CO)_2PPh_3$ complexes, synth, CN^- addition, 4515
chiral dienolate chemistry in remote asymmetric induction, 8895, 8899
chlorodienes, functionalized, synth from propargylic alcohols *via* Pd-catalyzed rearrangement of allylic acetates, 6547
1,3– by Cu(I)Cl-mediated coupling of alkenyltrimethylstannanes, 1173
1,3-cycloheptadiene and 2,3-dihydrooxepin, *ab initio* molecular orbital study of, vinylic *vs* allylic deprotonation, 9127
cyclopentadiene and *E*-1-acetoxy-1,3-butadiene, Diels-Alder reactions with diethyl ketovinylphosphonate, 2149, 2153
dehydroamino acid dienes, mono-osmylation of, synth of dehydroamino acids related to azinomycins, 447
dibromocyclopropane derivs containing a tethered diene unit, electrocyclic opening of, synth of trienic cyclopentane derivs, 439
1,5-di-t-butylbicyclo[2.2.2]octa-5,7-diene-2,3-dione, BF_3-catalyzed rearrangement to 1,6-di-t-butylbicyclo[3.2.1]octa-3,6-diene-2,8-diones, 8271
4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-diazabutadiene, cyclisation by electron-rich olefins, synth of *N*- aminopyrroles and pyridazines, 1351
diene iron tricarbonyl complexes for elaboration of 2,3,4-substituted piperidines, synth of (±)-dienomycin C and (±)-4-*epi*-dienomycin C, 3991
(diene)$Fe(CO)_3$ complexes by reaction of *meso*-2,4-hexadien-1,6-dial $Fe(CO)_3$ complex with alkylzincs in the presence of (*S*)-(+)-diphenyl-(1-methylpyrrolidin-2-yl) methanol, 3345
1,3-dienes, direct conversion into *N,N*-dimethyl unsaturated tertiary amides, 33
(*Z,E*)-dienes, generation from heating of *cis*-1,2-disubstituted 3-cyclobutenes, 7745
dienyl tert. amines, synth by termolecular Pd-catalyzed cascade insertion of allene into alkynyl iodo-arenes, 6565
2-diethoxyphosphonyl-1-alkoxy-3-methylpenta-1,3-dienes, synth by reaction of lithiated dianion of diethyl α-trimethylsilyl-prenylphosphonate with alkyl formates, 2951
diethyl buta-1,3-dienylphosphonate, synth, addition of lithiated Schöllkopf bislactim ether, 5801
(*E*)-5,5'-dimesitylbifuranylidenedione, reaction with Horner-Wittig reagent, 9255
enynyl sulfones, radical addition of $TolSO_2SePh$, synth of 1,4-di(arenesulfonyl)-1,3-butadiene, 4161
(5-ethoxy-1,5-diaryl-2,4-pentadienylidene)hydrazinium salts, synth by reaction of (5-ethoxy-1,5-diaryl-2,4-pentadienylidene)ethyloxonium perchlorate with hydrazines, 6717
fluorinated dienophiles, synth and reactivity of, 8233, 8237
functionalised skipped diene units, synth by intermolecular reaction of electron deficient alkylidene cyclopropanes with olefins, 5983
homogeneous $Pt(COD)Cl_2/PPh_3$ as catalyst for vinylation of aryl iodides, 8917
1-(α-hydroxyalkyl)-2-hydroxymethyl-1,3-butadiene derivs, synth, 755
N-isopropyl-5-tosyl-4-pentenamide, precursor to δ-acyldienyl anion equivalent, synth of 6-hydroxy-2,4-dienamides, 2833
(*E*)-1-methoxy-2-methylamino-1,3-butadiene, synth from γ-amino α,β-unsaturated dimethyl acetals, subsequent Diels-Alder reactions of, 8169
(2*E*)-4-methoxy-2,4-pentadienamides, synth, reactivity in Diels-Alder reactions, 3595
norbornadiene, photocycloaddition to naphthalene-1-carbonitrile, 4895
1-phenoxy-2-trimethylsilyloxy-1,3-butadiene, synth and Diels-Alder reactivity, synth of cyclic silyl enol ethers and α-phenoxy-ketones, 6951
4-phenyl-2-*N*-(*R*-(−)-α-(2-naphthyl)ethylamino)-1-thia-1,3-dienes, *exo*-Diels-Alder reactions of, synth of optically pure thiopyrans, 123
1/2-phenylcyclopentadienes, generation from phenylcyclopentenol, reaction with alkylthioacrylonitriles, 2417
[η^5-1-(phenylsulfonyl)cyclohexadienyl]iron(I) tricarbonyl hexafluorophosphate, reaction with hard and soft nucleophiles, synthetic applications, 5373
twisted 1,3-diene, abnormally high reactivity of the vinyl hydrogen toward singlet oxygen in,

7771
7-vinylnorcaradienes, thermal rearrangement of, synth of products from the vinylcyclopropane-cyclopentene rearrangement and from the Cope rearrangement *via* a common biradical, 7761
Dienones
cyclohexa-2,4-dienones, photochemical cleavage of under irradiation with visible light, 3631
8,9-diphenyltricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one, photochemistry of, [1,3]sigmatropic rearrangement via a singlet excited state and [2+2] intramolecular cycloaddition *via* a triplet excited state, 7065
spiro[2,5]octa-1,4-dien-3-ones, photolysis of, reversible biradical formation and biradical-olefin cycloaddition, 5853
tricyclo[5.2.1.$0^{2,6}$]decadienone 2-carboxylic ester, Cope rearrangement of on acetalisation with ethylene glycol, 7827
Dienynes
conjugated dienynes, synth by organometallic addition to pyrilium salts followed by Wittig homologation and dehydrohalogenation, total synth of the marine metabolite carduusyne A, 1913
reaction with (η^2-propene)Ti(O-iPr)$_2$, generation and reactions of bicyclic titania-cyclopentenes with allyl-Ti moieties, 1253
Dihydroxylation
see Hydroxylation
Dimerisation
calix[4]arene derivs with highly strained structures by intramolecular reductive dimerisation of appropriate formyl groups in the presence of low-valent titanium agents, 645
of 3,7-dimethyltricyclo[3.3.0.$0^{3,7}$]oct-1(5)-ene, 8601, 8605
of free pyranose and furanose sugars promoted by molecular sieves, synth of α,α-disaccharides, 6279
H-bonding – of phosphoric acid diesters, – constants, 1925
heterodimerisation of cysteine containing peptides using 2,2'-dithiobis(5-nitropyridine), introduction of the 5-nitro-2-pyridinesulfenyl group, 1347
of α-keto amides using samarium diiodide, synth of tartaric amides, 7755
oxidative – of anisole using TFAA and $CoCl_2$, 4511
Schlenk – of α,β-bistrimethylsilylstyrene on reaction with lithium metal, NMR study, 8719, 8723
Dimers
bishomohexaprismanedione, D_{2h} dimer of norbornadienone and precursor to hexaprismane, synth involving ring contraction of cycloalkene, 3239
bis(trisubstituted tetrathiafulvalenyl) disulfides, disulfide-bridged TTF dimers, synth by oxidative coupling of TTF thiolates, 5115
carbazole cyclic dimer, synth by Knoevenagel condensation of 3,6-diformyl-9-heptylcarbazole and 1,4-bis(cyanoacetoxymethyl)benzene using 3,6-diformyl-9-heptylcarbazole, 5909
oxygen-bridged dimer by oxidative silylation of zinc pyropheophorbide *a* methyl ester with chlorotrimethylsilane, 6395
phenyl-linked unsymmetrical dimers containing 8,12-diethyl-2,3,7,12,13,17,18-hexamethylporphyrin and *meso*-tetraphenylporphyrin, synth and prep of their metal complexes, 2637
urea-linked β-cyclodextrin dimers by transformation of 6-monoazido-6-monodeoxy-β-cyclodextrins *via* phosphinimines, 4011
Diols
acetylenic diols from aldol reaction of metallated α-alkoxypropargyl and γ-alkoxyallenyl derivs, application to synth of erigerol, 5519, 5523
activation of as cyclic carbonates, azide opening of the carbonates and hydrogenation of the resulting azidoalcohols, synth of enantiopure aminoalcohols, 3219
alkane-1,n-diol bis-acetates, lipase catalysed hydrolysis into the corresponding monoacetate, 625
alkyl substituted 1,3-diols, synth by transfer of an alkyl group from organocerium compds to the carbonylic function of a β-hydroxyketone, 2293
2-amino-1-cyclohexyl-6-methylheptane-3,4-diol, diastereoselective synth from L-phenylalanine, 1961
aryl substituted *cis* diols, reaction with α-acetoxyisobutyryl chloride, formation of *trans* vicinal chlorohydrin acetates, subsequent displacement of chloride, deprotection and reduction yields amino alcohols, 2529
axially chiral 1,1'-binaphthalene-8,8'-diol (BNDO) as derivatising reagent to determine the absolute configuration of α-chiral carboxylic acids by ^{1}H and ^{13}C NMR spectroscopy, 4737
(2*S*,3*R*,4*S*)-2-(benzylamino)-1-cyclohexyl-6-methylheptane-3,4-diol, asymmetric synth, 4525
1,1'-binaphthalene-8,8'-diol as a chiral controller in synth of optically active ketones by 1,4-

addition of lithium dialkyl cuprates, 7373
by dihydroxylation of olefins by t-BuOOH catalyzed by β-cyclodextrin borate, 3581
C6-C7 methylene-bridged derivs of estradiol, synth from 3-methoxyestra-1,3,5(10),6-tetraene derivs by Michael-type addition reactions involving dimethylsulfoxonium methylide, 1771
chemoenzymatic resolution and deracemization of (±)-1-methyl-1,2-epoxycyclohexane, synth of (1*S*,2*S*)-1-methylcyclohexane-1,2-diol, 8819
chiral 1,4-diols, synth from the ene acetal prepared from 4-pentenal and chiral hydrobenzoin, 2245
construction of two vic-diol moieties in approach to AAL toxins, 6169
conversion to optically active α,β-epoxysilanes and silylaminoalcohols, 555
diacetate of (*E*)-2-substituted-2-butene-1,4-diol, lipase-ctalysed hydrolysis of, synth of 3-alkyl-4-hydroxy-2-butenyl acetate, 91
meso-3,5-dihydroxy-4,5-dihydrodicyclopentadiene, synth, 205
dihydroxylation/glycol cleavage of tricarbonyl(triene)iron complexes, 423
1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, synth by $Sc(OTf)_3$-catalysed aldol reactions of polymer-supported silyl enol ethers, 5569
(+)-diolmycin A2, an anticoccidial agent from fermentation broth of *Streptomyces* sp. WK-2955, synth by ytterbium(III) trifluoromethanesulfonate catalysed reaction of epoxides with indole, 3727
4-*RS*-1,3-diols, rearrangement of involving alkylsulfanyl (SMe, SEt and SCH_2Ph) and sulfanyl (SH) migration, synth of tetrahydrofurans, 4823
4-PhS-1,3-diols, rearrangement with TsCl in pyridine, synth of allylic alcohols, scope and limitation of the [1,4] SPh shift, 1117
anti-1,3-diols, synth by allylboration of β-hydroxy aldehydes and ketones with allylboronic acid, 2181
enantioconvergent transformation of *cis*-dialkyl epoxides to (*R,R*)-*threo*-diols using rabbit liver microsomal epoxide hydrolase, 9089
3,4-epoxybutane-1,2-diols, synth and separation of optically pure metabolites of 1,3-butadiene, 7929
syn- and *anti*- 3,4-epoxy-1,2-diols of triphenylene, 8267
(2*R*,3*R*)-2,3-heptanediol,enantioconvergentenzymatic synth from (±)-*cis*-2,3-epoxyheptane, 8379
2-hydroxy- and 8-hydroxy derivs of 5-methylchrysene, synth from 2-naphthalene boronic acid, 6271
cis-indane-1,2-diol, conversion into chiral C_2-symmetric bis(oxazolines) using Ritter reaction, 813
O-isopropylidene derivs of diols, dioxirane oxidation to 2-hydroxy ketones, 115
or ketone alcohols from tandem radical cyclisation of acylsilanes with alkene or alkyne functionalities attached to silicon followed by hydrolysis, 7767
nitrodiols, oxidation of CHOH to CO by dimethyldioxirane, inhibiting effect of adjacent nitro group, 3507
perfluorobutanesulfonyl fluoride/DBU for formation of epoxides from 1,2-diols, 7497
4-phenylsulfanyl-1,3-diols, cyclisation with secondary and tertiary alcohols as nucleophiles, synth of substituted tetrahydrofurans, 4077
pinacols by coupling of aromatic aldehydes to d,l-hydrobenzoins on treatment with anhydrous titanium trichloride in dichloromethane, 3035
propane-2,3-diols for combinatorial oligomer synth, synth by base catalysed reaction of heterocyclic bases with *R*-(+)-glycidol, 3931
C_2-symmetric diols, synth by chiral reduction of diacyl aromatics using chloro(diisopinocampheyl)borane, 3795
C_2-symmetrical 1,1'-ferrocenyl diols, synth by CBS-reduction of ferrocenyl diketones, 25
tetrasubstituted triethylene glycols or disubstituted triethylene glycols, synth by alkylation of stannylene acetals by 1,2-dibromoethane or by 2-chloroethanol, 433
transacetalization for synth of tartaramide acetals of allylic aldehydes in DMF, 7197
trimethylsilyl substituted 1,3-diols by cathodic coupling of ketones with 3-(trimethylsilyl)allyl alcohols, 6737
vicinal diols and epoxides, synth by enantioselective hydrolysis of epoxyindene and dihydronaphthalene epoxides by the fungus *Beauveria sulfurescens*, 3319
see also Glycerol, Shikimic acid and analogues

Diones

3-alkylamino-2-hydroxy-4-hydroxymethyl-2-cyclopenten-1-one (cypentodine), formation by dehydration of a 4,5-di-*O*-tosyl Amadori product, 4667
2-benzazepine-1,5-diones, synth by ring enlarge-

ment of *N*-alkyl-3-hydroxy-3-propargylisoindolin-1-ones, 393
1,4-benzodiazepine-2,5-diones, synth using polymer supported amino acids and *o*-nitrobenzoic acids or protected anthranilic acids, 8081
bishomohexaprismanedione, D_{2h} dimer of norbornadienone and precursor to hexaprismane, synth involving ring contraction of cycloalkene, 3239
10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido-[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione, inclusion complex with urea and ethanol, 8905
chiral 3-substituted quinazoline-2,4-diones, solid phase synth starting from *N*-urethane anthranilamides, 7031
12,18-cyclopregnane-11,20-dione, base-catalysed rearrangement of, synth of 12(13→18)-*abeo*-pregnane, 929
1,5-di-t-butylbicyclo[2.2.2]octa-5,7-diene-2,3-dione, BF_3-catalyzed rearrangement to 1,6-di-t-butylbicyclo[3.2.1]octa-3,6-diene-2,8-diones, 8271
(*E*)-5,5′-dimesitylbifuranylidenedione, reaction with Horner-Wittig reagent, 9255
2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, synth and use in prep of vinyl cyclopropane carboxylic acids, 7119, 7123
(+)-favelanone, tetracyclic dione from the Brazilian plant Favela *Cnidoscolus phyllacanthus*, synth from 6-methoxy-5-methyl-3-trimethylsilyloxyisobenzofuran-1-carbonitrile, 6797
hex-3-yne-2,5-dione, cycloaddition to a π-CS_2 iron complex and 3-thioxo-1,2-dithioles, synth of intermediates which can be converted into poly acetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivs, 8861
10,11-[1,4-naphthalenedione]dipyrido[3,2-*a*;2′,3′-*c*]phenazine, an acceptor polypyridine ligand, synth by condensation of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, 5437
reductive coupling of phenacyl bromide to acyl chlorides and anhydrides using SmI_2, synth of β-diketones, 3885
spiro[cyclopentane-1,1′-indan]-2,5-dione system, valuable in synth of fredericamycin A, synth by rearrangement of the *trans*-α,β-epoxy acylates in tetrahydrobenz[*e*]indan systems, 1817
N-urethane protected-3,5-dialkyl-3-amino pyrrolidine-2,4-diones from urethane *N*-carboxyanhydrides in the presence of a base, 1027

Dioxanes
4-allyl 1,3–, Prins reactions forming 2-(2-hydroxyalkyl)tetrahydropyrans, 8679
1,2-dioxanes, 1,2,4-trioxanes and 1,2,4-trioxepanes, synth by electrophilic cyclisation of unsaturated hydroperoxyacetals and -ketals, 463
1,3-dioxan-4-ones, stereocontrolled conversion into tetrahydropyrans, 141
3-hydroxy-1,2-dioxan-4-carbonitriles, synth from alkenes and acylacetonitriles using $Mn(OAc)_3$ and air oxidation, 4949
5-methylene-1,3-dioxan-4-ones, use of aryl acrylates in Baylis-Hillman reactions, 1715
3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane, photo-fragmentation of through a C-O bond cleaved 1,6-diradical intermediate, 8181

Dioxazoles
spiro-1,3-dioxazoles, synth by 1,3-dipolar cycloaddition of nitrile-*N*-oxides with 3,5-di-t-butyl-1,2-benzoquinone, 5623

Dioxetanes
3-(4-acyl-3-hydroxyphenyl)-1,2-dioxetanes as chemiluminescent substrates with high efficiency in an aqueous system, 8535
3-alkoxymethyl-4-3-t-butyl-4-methoxy-1,2-dioxetanes, synth as a chemiluminescent substrate with short half-life emission, 5939
1,2-dioxetanes from 1-alkoxymethyl-2-aryl-1-t-butyl-2-methoxyethylenes by oxygenation, 397

Dioxins
1,3-dioxin-4-ones, intramolecular photoaddition to dihydro-4-pyrones, 3521
2,2,6-trimethyl-4*H*-1,3-dioxin-4-one, reaction with imines, synth of *N*-alkenyl acetoacetamides, 7429

Dioxiranes
dimethyl –, formation of a triepoxide with chrysene, structure, 8671
dimethyl – oxidation of fused cyclopropanes, formation of keto groups in the larger ring, 5363
dimethyl –, preparation of concentrated (220-350 mM) and acetone-free solutions, 3585
dimethyl – in ring expansion of a fused 2,3-dihydroxyindoline to a bridged 3,4-dihydro-3,4-dihydroxy-1*H*-2,1-benzoxazine in synth of antibiotic FR-66979 core, 5243
dimethyl –, free radical activity in adamantane oxidation, effect of $CBrCl_3$ and of air, 249
dimethyldioxirane or methyl(trifluoromethyl)-dioxirane for oxidation of *O*-isopropylidene derivs of diols to 2-hydroxy ketones, 115
dimethyldioxirane-Mn(C116)TDMPPCl porphy-

rin as epoxidizing reagent of uracil derivs, 2647
methyl(trifluoromethyl)dioxirane as oxidising agent for sulfides, 2299
oxidation of CHOH to CO by dimethyldioxirane, inhibiting effect of adjacent nitro group, 3507

Dioxolanes
4,4-diethynyl-5,5-diallyl-2,2-dimethyl-1,3–, double Pauson-Khand reaction for synth of tetraquinane skeleton, 7185
dioxolanes, intramolecular reaction with metallocarbenes, prep of oxonium ylids, 5053
1,2-dioxolanes, synth by fragmentation of peroxyhemiacetals, 6409
plakinic acids, marine metabolites containing the 1,2-dioxolane group, synth from alkan-2-ones involving condensation, isomerisation and peroxymercuration, 1885
Hg-sensitized dehydrodimerization of 1,3–, formation of monocyclic ester-acetals produced by opening of one ring, 6853
TADDOL organocerium reagents, enantioselective addition to aldehydes, effect of TADDOL ligand structure, 2675
α,β-unsaturated dioxolanones derived from mandelic acid, addition to Grignard reagents to yield adducts which could be converted to allylic alcohols and α-hydroxy aldehydes for use in eicosanoid synth, 1421, 1425

Disulfides
diacylglycerols containing disulfide links between chains, 5769
diaryl –, formation of trifluoromethylthio arenes on heating with potassium trifluoroacetate, 9057
ethanedithiol disulfide adduct in acidolytic cleavage of Cys(Acm)-containing peptides from solid support, 4117
pseudo-symmetrical four-helix-bundle – with four intramolecular disulfide cross links, synth, 201
thiosulfinate esters (RSO.SR'), reaction with sulfenate esters and sulfenyl chlorides, formation of disulfides and sulfinate esters or sulfinyl chlorides, 9101
trifluoromethyl thioethers from CF_3SiMe_3 with disulfides, 6865

Dithianes
diethyl 1,3-dithiane-2-phosphonate, use in synth of KDO analogue, 1595
dithiane oxide unit as asymmetric building block for synth of 2-(*R*)- and 2-(*S*)-hydroxy-1-phenylbutan-1-ones from propanal, 8929
enantioselective synth of 1,3-dithiane 1-oxide using whole-cell bacterial oxidation, 6117
radical photo-addition of 1,3-dithian-2-yl phenylselenide to electron-deficient alkenes, 2743

Dithiazoles
N-[2-(arylamino)phenyl]-4-chloro-1,2,3-dithiazol-5-imines, thermolysis, trapping of S_2, synth of benzimidazole-2-carbonitriles, 4589
5-arylimino-4-chloro-5*H*-1,2,3-dithiazoles, reaction with stabilised phosphoranes, ring cleavage following attack at S, 869
4-chloro-5*H*-1,2,3-dithiazol-5-thione, reaction with primary and secondary alkylamines, synth of *N*-alkyl- and *N,N*-dialkylcyanothioformamides, 3709

Dithiolanes
dithiolane-isocyanate iminium methylides, hetero-1,3-dipolar cycloaddition of, route to 1,3-oxazolidine- and thiazolidine-2-thiones, 711

Dithioles
5-alkylthio-3*H*-1,2-dithiole-3-thiones, synth by reaction of dialkyl malonate esters with P_2S_5/S_8 with 2-mercaptobenzothiazole/ZnO as catalyst, 2137
5-aryl-1,3-dithiolo[1,4]dithiin-2-thiones by action of Lawesson's reagent on 4,5-di(phenacylthio)-1,3-dithiole-2-thione, 2821
2-(1,3-benzodithiol-2-ylidene)-1,3-benzoxathiole (dibenzo-oxatrithiafulvalene), synth and characterisation, 2931
1,2-dithiole-3-thiones, flash vacuum pyrolysis of, synth of 1,2-propadiene-1,3-dithione, 4805
1,3-dithioledithione, generation and cycloaddition to styrene and stilbene, preparation of Ph-substituted 5,6-dihydro-1,3-dithiolo[4,5-*b*][1,4]dithiin-2-thiones, 7603
polyacetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivs by cycloaddition of hex-3-yne-2,5-dione onto a π-CS_2 iron complex and 3-thioxo-1,2-dithioles, 8861
thienylidenevinylene oligomers end-capped with 1,3-dithiol-2-ylidene groups, cyclic voltammetry, UV/vis spectra, 6121

Diynes
acyclic enediynes, dienynes, dienediynes, by Pd-catalyzed hydrostannation and ene-yne couplings, 7971
bicyclo[7.3.0]dodecadiyne core moiety of the C-1027 chromophore, synth through cyclisation of alkynyl aldehyde, 5135
C-1027 chromophore, absolute configuration by Mosher's method applied to cyclized product, nOe effects in apoprotein-bound compd, 4997
1,6-cyclodecadiyne, iodine-induced transannular

coupling, 1571
dialkyl di[60]fullerenylacetylene and butadiyne, dumbell-shaped difullerenes, synth, cyclic voltammetry, 6153
dialkynes with orthogonal protection by $SiMe_3$ and $GeMe_3$ groups, application to 1,2-diethynyl benzene and ethylene, 2,5-diethynylpyridine, disaccharides, 7959
1,2-dialkynylbenzenes, synth from catechol ditriflates by Pd-catalyzed coupling promoted by iodide ion, 7901
1,8-diazacyclotetradeca-4,11-diyne and 1,8-diazabicyclo[6.6.6]eicosa-4,11,17-triyne, synth from 1,6-dibromohex-3-yne, 479
diethynyl oxiranes, Pd-catalyzed coupling of alkenyl iodides, synth of epoxy enediyne intermediates related to neocarzinostatin chromophore, 9335
4,4-diethynyl-5,5-diallyl-2,2-dimethyl-1,3-dioxolane,bis-enone tetraquinane by double Pauson-Khand reaction, 7185
enediyne estrogen conjugates, synth involving Mitsunobu coupling of the desired phenol with alcohol, cytotoxic activity, 3643
enediynes with epoxide trigger, synth of esperamycin core, and of an esperamycin-dynemycin hybrid, 8683, 8687
enediynes, reduction to the corresponding [m,5,n] tricyclic compds *via* alkylpalladium intermediates, 8875
3-ene-1,5-diynes, synth from 3-benzylidene-4-hydroxy-1,5-diynes by allylic rearrangement, 8413
fischerellin A, perhydro-3-(pyrrol-2-ylidene)-pyrrole-2,4-dione with alkenediyne tail from cyanobacterium, 6539
(*E*)- and (*Z*)-hex-3-ene-1,5-diynes by a modified Ramberg-Bäcklund reaction of dipropargylic sulfones, 1049
kedarcidin and C-1027 chromophores, synth of 10-membered masked oxaenediyne analogue, 2433
monocyclic enediynyl β-lactam antibiotics, synth and biological activity, 2475
neocarzinostatin chromophore, synth of naphthoic acid component of from 4-bromo-3-methylanisole by photocyclisation reaction, 587
4-phenyl-8-methoxyoct-4-ene-2,6-diyn-1-amine, pyridoxal-mediated cycloaromatization, 5397
tetrakis and octakis(*m*-benzene-butadiyne)s, [4$_4$]-metacyclophanes, synth and self-association, 9325
tricholomenyns C, D, E, dimeric – geranyl cyclohexenones from fungus *Tricholoma acerbum*, 6223
unsymmetrical conjugated –, synth by CuI-catalyzed coupling of terminal alkynes to iodo-alkynes in pyrrolidine, 2763
unsymmetrically substituted 2,4– alcohols, synth by Cadiot-Chodkiewicz coupling, NMR, polymerization, 5023

Drugs

5-aminocarbonyl-10,11-dihydro-5*H*-dibenzo[*a,e*]cyclohepten-5,10-imine (ADCI), NMDA receptor antagonist, synth of corresponding nitrile, 8655
(±)-(*Z*)-2-aminomethyl-1-phenylcyclopropane-*N,N*-diethylcarboxamide ((±)-milnacipran), antidepressant drug, synth of (+)- and (–)-milnaciprans, 641
bupivacaine (levobupivacaine), drug used as local anaesthetic, synth of enantiomerically pure (*S*)-bupivacaine from (*S*)-lysine, 6399
clopipazan, tricyclic pharmacologically active compd, synth *via* directed dilithiation of diaryl compds, 5073
cocaine, modification of Willstätter synth to prepare 6/7-oxy-substituted analogues, 5333
cocaine-diamide hapten, design and synth as an anti-cocaine immune response for the treatment of cocaine abuse, 5479
CP-122,288, anti-migraine agent and conformationally restricted analogue of sumatriptan, synth by Heck reaction using 2,6-dibromoaniline, 4289
crown nucleoside monophosphate diesters, prodrugs with anti-HIV activity, 3101
dopamine, synth of an N_2S_2 conjugated BAT phenyltropane ligand (BAT = bis(aminoethanethiol)) as a potential technetium-99m imaging ligand for dopamine transporter, 4353
fluoxetine, synth by enzymatic resolution of homoallyl alcohols, 9253
hapalosin, depsipeptide agent combating drug resistance, synth, 3467
heparin, synth of a disaccharide containing the sequence *O*-(2-deoxy-2-sulfamido-6-*O*-sulfo-α-D-glucopyranosyl)-(1→4)-2-*O*-sulfo-α-L-idopyranuronic acid present in heparin, activity of, 1053
loloatin B, structure of gram-positive active antibiotic, and note on – resistance, 7201
qinghaosu/artemesinin, behaviour in presence of heme and non-heme Fe(II) and Fe(III), 253, 257
Ro24-5913, an *N*-succinyl-3-(2-thiazolethenyl)-

anilide leukotriene D_4 antagonist, synth *via* (*E*)-4-cyclopentyl-2-[2-(3-nitrophenyl)ethenyl]-thiazole, 5445
taxol®, synth of 2'-*epi*-taxol from natural Taxol® by formation of oxazoline on the side chain with concomitant inversion of the C-2' followed by hydrolysis, 4785
see also Alkaloids, Biologically active compds, Cannabinoids, Pharmacologically active compds

Dyes
erythro and *xantho*apocyanine dyes, synth of ethiodides of 1-ethyl-3-(2'-quinolyl)-1,4-dihydroquinoline and 3-methyl-5,6-benzoindazolino[1,2-c]quinoline from *N*-ethylquinolinium iodide, 4801
bis-stilbenyl squaraines, synth, properties, 1191
methidium intercalator phosphoramidite, synth and incorporation into an oligonucleotide, 8467
tetrafluorofluorescein as fluorescent marker for protein SH groups, 7905

Eicosanoids
constanolactone E, marine eicosanoid from red alga *Constantinea simplex*, synth from allyl phenyl sulfone and chiral epoxymesylate, 7407
1,8-diazabicyclo[6.6.6]eicosa-4,11,17-triyne, synth from 1,6-dibromohex-3-yne, 479
16-,17- and 18-hydroxyeicosatetraenoic acids, cytochrome P-450 arachidonate metabolites, synth using chiral adducts from the Grignard additions of 1,3-dioxan/1,3-dioxolan-4-ones, 1421, 1425
see also Leukotrienes, Prostacyclins, Prostaglandins, Prostanoids

Electrochemical reactions
anodic *gem*-difluorination of dithioacetals mediated by *p*-methoxyiodobenzene chlorofluoride, synth of hypervalent iodobenzene chlorofluorides, 4725
anodic methoxylation of proline and pipecolic acid esters, 8395
anodic oxidation of cyclic ketones in methanol, effect of ring size, 5759
anodic oxidation of vindoline followed by reduction of the formed intermediate, synth of 10,10'-bisvindoline, 3659
cathodic coupling of ketones with 3- and 2-(trimethylsilyl)allyl alcohols, synth of trimethylsilyl substituted 1,3-diols and homoallylic alcohols respectively, 6737
electrochemical oxidation of phenol to construct tricyclo[5.3.1.$0^{1,5}$]undec-9-en-8,11-dione in synth of a 2-*epi*-cedrene isoprenologue, 4043
electrochemical oxidation of tri-t-butyl(trimethylsilyl)tetrahedrane and tri-t-butyl(isopropoxydimethylsilyl)tetrahedrane, study by cyclic voltammetry, 583
electrochemical reduction of a mixture of cobalt(II)(salen) and benzotrichloride, synth of 1,1,2,2-tetrachloro-1,2-diphenylethane and 1,2-dichlorostilbene–diphenylacetylene, 8105
electrocyclisation in bicyclo[4.4.1]undeca-2,4-diene and bicyclo[4.2.1]nona-2,4-diene systems, 2553
electrosynthesis of cycloalkylphosphonates from diisopropyl trichloromethylphosphonate using magnesium electrochemical activation, 3679
half-wave potentials of bis(benzo)-bis(ethylenedithio)tetrathiafulvalene deriv, 8085
intramolecular Arbuzov reactions of dialkyl phenylphosphonites initiated by anodic oxidation, 1625
mixed Kolbe electrolysis, synth of homologues of dihydro-12-oxophytodienoic acid and jasmonic acid, 8715
thioether groups as electroauxiliaries, C-C bond formation by electro-oxidation in presence of C nucleophiles, 3157

Electrochemistry
anodic cyclizations and t-Boc proline ester oxidation, operation using a simple lamp battery, 8317
benzoquinone and 1,4-dimethoxybenzene fused to C_{60} by two CH_2 bridges, anion radicals and dianion diradical, ESR, electrochemistry, 7987
C_{60}^- and C_{60}^{2-} by reduction of C_{60} with zinc powder in aqueous caustic/THF, 7409
cycic voltammograms of bridged and unbridged 2,2'-bi-imidazolium and bi-benzimidazolium salts, isolation of aza-analogues of TTF, 2357
cyclic voltammetry for characterisation of dications of 1,3-bis(diarylamino)benzenes, 9207
cyclic voltammogram of the charge transfer complex of [60]fullerene-tetrathiafulvalene system with tetrafluorotetracyano-*p*-quinodimethane, 5979
dialkyl di[60]fullerenylacetylene and butadiyne, dumbell-shaped difullerenes, synth, cyclic voltammetry, 6153
dimeric dumbbell fullerene, *N*-methylpyrrolidine-fused, connected *via* *N,N'*-di-*p*-phenylenepiperazine group, voltammetry, ^{1}H NMR, 9391
electrochemical studies of oligo(2,7-biphenylenylene-(*E*)-vinylene)s, 5913

meso-tetraphenyl β-(2-benzoquinonyl)porphyrin, intramolecular charge transfer, UV, –, 8437
β-nitro-tetrakis(*meso*-pentafluorophenyl) porphyrin-ato-Cu(I) derivs, synth, UV, cyclic voltammetry, 261
pristinamycin I_A, electrochemical reduction, effect of macrocycle ring-opening, 7499
rates of electron transfer in solution and at electrode to substituted bromobenzenes in DMF, 3553
reduction potentials for buckminsterfullerene (C_{60}) ball-and-chain molecules containing the porphyrin chromophore, 4797
soluble tetrathiafulvalene deriv with double bridge to benzoquinone, synth and cyclic voltammetry, 2503
tetrakis-*meso*-(2,3,5,6-tetrafluoro-4-X-phenyl)-2-Y-porphyrins (X = F or NMe_2, Y = H or NO_2), synth, UV, NMR, and electrochemical data, 5421
thienylidenevinylene oligomers end-capped with 1,3-dithiol-2-ylidene groups, cyclic voltammetry, UV/vis spectra, 6121
voltammograms, monolayers consisting of bis-galvinoxyl-disulfides, 8837

Electrocyclic reactions
(4*Z*)-1,2,4,6-heptatetraenes, synth by boron methodology and isomerization to 5-methylene-1,3-cyclohexadienes, 4087
see also Cyclization, Photochemistry

Electron spin resonance
2-aryl-3-oxophenalen-1-oxyl radicals, generation, –, 873
benzoquinone and 1,4-dimethoxybenzene fused to C_{60} by two CH_2 bridges, anion radicals and dianion diradical, ESR, electrochemistry, 7987
cheletropic trapping of NO by a bisketene and a diene, ESR of nitroxides generated, 2113
2,5-dimethyl-6-oxophenalen-1-oxyl radical, generation, –, dimerization, 877
ESTN spectroscopy for characterisation of dications of 1,3-bis(diarylamino)benzenes, 9207
bis-galvinoxyl-disulfide, 8837
of reaction between 2-aryl-1-nitro-1-alkenes and trialkylgallium compds, 3347
spin trapping by 1,3,3-trimethyl-6-azabicyclo-[3.2.1]oct-6-ene *N*-oxide (trazon), ESR of nitroxide adducts, 5313
to study photolysis of 3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivs, synth of 2-acetylaniline derivs *via* arylnitroxyl radicals, 2895

Electron transfer
arylcycloheptatrienes, photoinduced and thermal –, generation of aryl tropylium ions, 7493
electron transfer of semisynthetic myoglobin bearing bis(iminodiacetic acid) moiety, 9233
electron-transfer induced electrocycloreversion of benzocyclobutenols, generation of *o*-quinodimethane intermediates which tautomerise to benzophenones, 5547
inter-flavin – in ground state and in absence of external electron donors/acceptors, UV of products, 7885
meso-tetraphenyl β-(2-benzoquinonyl)porphyrin, intramolecular charge transfer, UV, electrochemistry, 8437
PET cyclisation of α-trimethylsilylmethyl amines with tethered non-activated olefins, synth of (–)-retronecanol, 2285
photoinduced – of α,β-epoxy ketones with 2-phenyl-*N,N*-dimethylbenzimidazoline, synth of corresponding aldols, effect of water on reaction, 7079
photoinduced – mechanism, 1,2-azidohydroperoxides by photooxygenation of alkenes in presence of azide ions, 8367
photoinduced – reactions of cyclopropanone acetal with conjugated enones in the presence of a redox-type photosensitiser, 1833
photoinduced C_3-unit introduction to electron-deficient molecules by use of cyclopropanone silyl acetals *via* electron transfer, 2975
photoinduced electron transfer reactions using photosensitisers covalently anchored on silica, 381
photoinduced through-bond electron transfer and rearrangement in *N*-[ω-(*p*-nitrophenoxy)alkyl]-anilines, 505
rates of – in solution and at electrode to substituted bromobenzenes in DMF, 3553
– within zeolites, photooxidation of stilbenes, 5235

Electronic effects
electron donor effect of $Cr(CO)_3$ complexation, evidence from geometry of 1,8-diphenylnaphthalene and its mono and bis (chromium tricarbonyl) complexes, 5385
reaction of sulfenamides with singlet oxygen, steric and electronic effects on partitioning of persulfinyl intermediate between quenching and chemical reaction products, 6093
steric and electronic effects on isomerisation of electron deficient vinylcyclopropanes by pentacarbonyl iron, 357

Electronic spectra
absorption, azulene-containing donor-acceptor molecules, 419
absorption, C_{60} in the presence of calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units in organic solution, 73
absorption, fullerene (C_{60})-Ag^+ interactions inducing a solution colour change, 7091
absorption, NLO chromophores containing cyclic-locked, conjugated triene segment, 7055
absorption spectra, determination of rates of nucleophilic capture of the phenylcyclopropane cation radical, 1841
absorption, tetraanthraporphyrazine and its endoperoxide, 5083
acenaphtho-porphyrins, UV spectra of mono- and di-fused systems, large red shifts observed, 4873
bacteriochlorin derivs for photodynamic therapy, synth from bacteriochlorophyll-a, UV, 6431
bathochromic shifts of push-pull 5,5'-disubstituted 3,3'-dihexyl-2,2'-dithiophenes, 1617
a [2.2](3,3')biphenylo(3,6)phenanthrenophene, mixed [2.2]cyclophane, UV, 3877
diffuse reflectance spectra of charge transfer complexes between methylviologen and aromatic donors within zeolite cavity, 2873
1,3-diphenylpropenyl radical, laser photolytic generation and UV detection, 4923
π,π-interactions by UV in stilbenes and tolans with 8-membered unsaturated 2,6-bridge, 4487
isobacterio- and bacterio-chlorin metal complexes, 3781
ketobacteriopurpurins, synth and UV/vis spectra of novel types, 747
meso-tetraphenyl β-(2-benzoquinonyl)porphyrin, intramolecular charge transfer, UV, electrochemistry, 8437
non-planar *meso*-tetraphenyl porphyrins with progressive ethyl substitution on pyrrole rings, UV/vis spectra, 1183
novel porphyrin arrays directly linked through the *meso* carbons, UV, fluorescence, 8399
phenyl and 1,8-diphenyl naphthalene and their mono and bis (chromium tricarbonyl) complexes, UV, 5385
soluble tetrathiafulvalene deriv with double bridge to benzoquinone, synth, cyclic voltammetry, and UV spectra, 2503
sulfone-substituted thiophene chromophores for second order nonlinear optics, UV spectra, 7279
meso-tetra-(4-carboxyphenyl)porphyrin Na salt, 1:2 complex with permethylated β-cyclodextrin in water, UV, fluorescence, 8019
tetrakis-*meso*-(2,3,5,6-tetrafluoro-4-X-phenyl)-2-Y-porphyrins (X = F or NMe_2, Y = H or NO_2), synth, UV, NMR, and electrochemical data, 5421
thienylidenevinylene oligomers end-capped with 1,3-dithiol-2-ylidene groups, cyclic voltammetry, UV/vis spectra, 6121
UV data for 1,1'-bicyclopentadiene derivs, 2983
UV, fluorescence, of tripodaphyrins, *meso*-triphenylporphyrins attached through diphenylacetylene residues to a central tetrahedral C atom, 3825
UV, modified oligonucleotide containing methidium dye, 8467
UV, oligo(2,7-biphenylenylene-(*E*)-vinylene)s, 5913
UV, oligonucleotides containing an azobenzene linker, 637
UV, temperature dependent, formation of a self-pairing PNA oligomer with alternating alanyl/homoalanyl backbone, 475
UV/vis, covalently-connected azobenzene-porphyrin derivs, 699
vis/nir absorption of stilbenyl and distilbenyl squaraines, 1191

Elimination reactions
elimination of C_2 from 9,10-didehydrophenanthrene, formation of biphenylene, 6819
of (±)-8α-methoxycarbonyloxy-4aβ-methyl-2,3,4,4a,5,6,7,8-octahydronaphthalene, importance of chirality reversal depending on the palladium-chiral phosphine ratio, 7115
pyrolytic β-elimination of sulfoxides promoted by microwave irradiation, 1855

Emmons-Horner-Wadsworth reactions
olefination of 1,2-diketones, synth of 4-hydroxycyclopent-2-en-1-ones, 1899
with a phosphonoacetate reagent, synth of 4,4-disubstituted conjugated allenecarboxylates, 3735
tandem-sequence Corey-Kwiatkowski and Horner-Wadsworth-Emmons reaction for synth of di- and trisubstituted enones, 9177

Enals
enaminoketones and enaminoaldehydes, synth from chloroacroleins, 8751
2-ethoxy-3-phenylthiopropenal, synth and use in generating vinylthionium ions for intramolecular cycloadditions, 783

Enamides
N-cyclohexenyl-*N*-phenyl arylamides, removal of cyclohexenyl group under oxidative photolysis

conditions, 3169
intramolecular aryl radical cyclisation of –, synth of benzothienoindolizidines, 7707
nitration by acetyl nitrate of steroidal –, 2079
selective reduction of nitroalkenes to – using Fe, 1605

Enamines
alkenyl transfer of enamines for the prep of cycloalkenylmethyleneoxazolones which could be cyclised to [*b*]-fused pyridines, 8871
arylaldehyde synth from methyl group *via* β-dimethylaminovinyl – in pyridine rings, 7503
cyclic –, cycloaddition with 4-silyloxy-1,3-oxazin-6-ones, synth of bicyclic 2-pyridones, 4977
enaminoesters, photocyclisation of, synth of spiroindoline imides and their transformation into precursors of *Aspidosperma* alkaloids, 37
enaminoketones by irradiation of 1-aroyl-2-methylenepyrrolidines, 7749
enaminoketones and enaminoaldehydes, synth from chloroacroleins, 8751
enaminoketones, synth from condensation of bulky amines with ethyl acetoacetate or 2,4-pentanedione, activation by high pressure or catalysis by ytterbium triflate, 3691
enaminones, pathway of reduction by $LiAlH_4$, deamination of 5-dialkylaminotricyclo-[5.2.1.$0^{2,6}$]deca-4,8-dien-2-ones, 8003
Grignard addition to enaminones derived from 2-methylcyclohexane-1,3-dione, 3823
hydroxy-enamines derived from the condensation of β-aminoalcohols and carbonyl compds, oxidation of, synth of polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, 9203
metallo-enamine aza-annulation in synth of 1,2,4a,5,6,10b-hexahydrobenzo[*f*]quinolin-3(4*H*)-ones from 2-tetralones, 4121
(*Z*-)trifluoromethyl – , reactivity towards organolithiums, 171

Enantioselection
2-alkyl-1,4-butanediols, enantioselective synth from 5-menthyloxy-butenolides, 2429
α-allenic alcohols, enantioselective synth from diisopinocampheyl propargyl borane, 4125
α-allylic glycine derivs using $Al(OiPr)_3$/quinine catalyst in Claisen ester enolate rearrangement, 7945
asymmetric addition of Grignard reagents to chiral 1-acylpyridinium salts, chiral auxiliary study, 3807
asymmetric chloral-ene reaction using chirally poisoned racemic Ti catalysts, 3449
asymmetric cross-coupln g of biaryl 2,6-ditriflates with alkynyl Grignards and chiral Pd catalysts, 3161
asymmetric hydrosilylation of cyclic 1,3-dienes by $SiHCl_3$ catalyzed by chiral phosphine-Pd complex, 4169
asymmetric intramolecular cyclopropanation of a silyl enol ether, synth of phorbol CD ring skeleton, 2449
asymmetric transfer hydrogenation, use of 1*R*, 1′*R*-2,6-bis[1-(diphenylphosphino)ethyl]pyridine-Ru complex, 797
3-azido-1-chloro-2-trimethylsilyloxypropane, enantioselective synth from epichlorohydrin involving dynamic kinetic resolution, 7937
baker's yeast reduction of ethyl 3-oxo-4-(phenylthio)butyrate, enantioselective *N*-methoxy-β-lactam synth, 7533
bis-oxazoline ligands for asymmetric Cu-catalyzed cyclopropanation and aziridination of olefins, 6189
catalytic enantioselective protonation of Sm(III) enolates using C_2-symmetric chiral diol, 2805
chemoenzymatic resolution and deracemization of (±)-1-methyl-1,2-epoxycyclohexane, synth of (1*S*,2*S*)-1-methylcyclohexane-1,2-diol, 8819
chiral amino-thioesters as catalysts for addition of diethyl zinc to aldehydes, 8767
chiral catalytic azido-debenzoyloxylation of *cis*-3,6-dibenzoyloxycyclohexene in synth of (-)-epibatidine, 7485
chiral reduction of diacyl aromatics to C_2-symmetric diols by chloro(diisopinocampheyl)-borane, 3795
chiral Rh_2(II)-catalyzed insertion of carbenoid into Si-H bond, 7631
chiral salen Schiff base for enantioselective addition of Et_2Zn to aldehydes, 4613
chiral synth of 2,2,4-trisubstituted tetrahydrofurans *via* titanium imide enolates, 5657, corrig. 6821
conformationally constrained chiral Cu-bis(oxazoline) catalyst in enantioselective Diels-Alder reactions, 3815
cyclopropanation of allylic alcohols containing other olefinic groups, use of chiral dioxaborolane auxiliary and glycosylated alcohol to induce –, 7925
cyclopropanation of monosubstituted ethenes by methyl phenyldiazoacetate catalyzed by dirhodium prolinates, 4129, 4133
diborane reduction of ketones, use of 2-phenyl-1,3,2-oxazaphospholidine 2-oxides as chiral

catalysts, 8351
enantioselective synth of chiral 5-(α-hydroxyisobutyl)pyridine-3-carbamides by asymmetric autocatalytic reaction on addition of diisopropyl zinc to 5-formyl compd, 8783
enzymic (CAL) enantioselective hydrolysis of bis-(trifluoromethyl)alkanediol diacetates, 5001
epoxidation of (±)-3-alkylindenes by chiral Mn(III)-salen analogues, 4533
highly hindered β-arylisohexanoic acid derivs by asymmetric Michael addition to *N*-(isohex-2-enoyl)-4-phenyloxazolidin-2-one, 7817
hydrolysis of 2-hydroxymethyl-1-phenylcyclopropane-1-carboxylic acid lactone by fungal cell cultures, 4519
2-hydroxybut-3-enyl *p*-nitrobenzoate, Sharpless epoxidation using diisopropyltartrate as chiral auxiliary, 7929
trans-3-hydroxypipecolic acid, synth of both enantiomers, 2031
α-ketoester oximes, enantioselective allylation using allylzinc and external chiral ligand, α-(benzyloxyamino)-ester synth, 8997
ketone chiral reducing agent, lithium *B*-[2-(2-dimethylaminoethyl)isoapocampheyl]-9-borabicyclo[3.3.1]nonyl hydride, 3791
lipase-catalyzed *trans,anti,trans*-2,6-dimethylcyclooctane-1,5-diol acylation, and allylic substitution using derived chiral 9-phosphabicyclononane-Pd complex, 7565
3-methylene-2,3-dihydrofuran, ene reactions with aldehydes promoted by chiral Ti(IV)/binol, 7893
2-propylenebis-(2-oxazoline) and 2,6-di(-2-oxazolinyl)pyridine, Cu(II) and Zn(II) complexes as catalysts in Diels-Alder and aldol reactions, – comparison, 7481
radical-chain hydrosilylation of alkenes using chiral thiol catalysts, 9123
reduction of 2-aroyl-pyridines and *N*-allylpyridinium triflates, and benzophenones, using oxazaborolidine-catalyzed catecholborane, 5675
reduction of α,α,α-trifluoro-α′-sulfenyl ketones by various microorganisms, 3903
C_2-symmetric dimethyl 2,2′-bisdiphenylphosphinoferrocene-1,1′-dicarboxylate, synth and use as chiral ligand in Pd-catalyzed allylic alkylation, 7995
synth of (+)- and (-)-dihydrokawain, 5,6-dihydro-2-pyrones, 6503
1,2,3,4-tetrahydroisoquinoline, 1,1-disubstituted, convergent synth of spiro-fused component of ecteinascidin 743, 7163
tris-TADDOL (1,3-dioxolan-derived auxiliary) organocerium addition to aldehydes, 5821
see also Asymmetric induction, etc.

Ene reactions
Alder ene reactions of allenynes catalysed by $CpCo(CO)_2$, synth of six-membered carbocycles, 7027
asymmetric carbonyl-ene reaction with alkynylogous and vinylogous glyoxylates catalysed by a binaphthol-derived chiral titanium complex, application to the synth of chiral isocarbacyclin analogues, 8515
asymmetric chloral-ene reaction using chirally poisoned racemic Ti catalysts, 3449
diethyl azodicarboxylate, – with allylic and homoallylic silanes, regio-control, 6607
ene-type reaction of lactol-derived allylic ethers catalysed by silyl triflates, synth of propionaldehyde-substituted tetrahydrofuranes and -pyrans *via* the cyclic oxonium intermediate and allyloxysilyl moiety, 3705
3-methylene-2,3-dihydrofuran, – with aldehydes promoted by Lewis acids, 7893
solvent effects on stereoselectivity of singlet oxygen – with allylic alcohols, 7159
type II intramolecular carbonyl ene reactions of vinyl silanes, synth of methylene silacyclohexanols, 3411
of unsaturated carbonyl compds catalysed by diiodosamarium, 5195
of the vinyl hydrogen rather than the allyl hydrogen of twisted 1,3-dienes with singlet oxygen, 7771

Enediynes
see Diynes

Energy
free energies of hemiacetal formation in aqueous solution between alcohols and acetaldehyde, chloral, and fluoral, effect of $n \rightarrow \sigma^*$ interactions, 9279

Enol ethers
γ-alkoxyallyl stannanes, synth from methoxyallyl compd *via* mixed acetals, 3195
asymmetric intramolecular cyclopropanation of a silyl –, synth of phorbol CD ring skeleton, 2449
chiral β-lithio –, synth, alkylation and acylation, 7255
chiral *N*-tosylnorgranatanone silyl enol ether, cyclopropanation, 4987
chiral (*Z*)-enol ethers, Bradsher cycloaddition

with 2,7-naphthyridinium salt, synth of highly functionalised isoquinoline derivs, intermediates to manzamine A, 7019
exchange of methyl – for allyl –, regiocontrol in Pd(II)-catalyzed Claisen rearrangements, 7991
(2*E*)-4-methoxy-2,4-pentadienamides, synth, reactivity in Diels-Alder reactions, 3595
4-methylene-1,3-dioxans, synth from dioxanone using dimethyltitanocene and $AlBu_3$-catalyzed rearrangement to tetrahydropyran-4-ones, 141
polymer-supported silyl enol ethers, $Sc(OTf)_3$ catalysed aldol reactions of, prep of 1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, 5569
silyl –, manganese(III)-salen oxidation to chiral α-hydroxy ketones, 6531
silyl – on polymer support, synth and reaction with imines, 2809
silyl –, reaction with 3-cephem triflate, 3-(β-ketoalkyl) cephems *via* four-membered cycloadducts across 2/3 positions, 7549
silyl –, substitution of acetals, catalyzed by aminium salts, 3483
silyl enol ethers, reaction with α-chloro-α-phenylselenoesters, synth of α-phenylseleno-γ-keto esters and γ-butyrolactones, 9173
in synth of (3,4,6)tri- and (3,4)-di-*O*-benzyl-2-deoxy-L-glucose by heterocycloaddition of (*E*)-benzyloxymethylene pyruvate with *O*-vinyl mandelic ester, 4007
(*Z*)-trifluoromethyl –, reactivity towards organolithiums, 171
unsaturated silyl enol ethers, PET-oxidative cyclisation of, synth of bicyclic and tricyclic ketones, regioselective control by solvent effects, 7349

Enolates

acetylthiazolidinethione-derived enolates, boron enolates and silyl enolates; comparison of aldol-like reactions with cinnamaldehyde and the C7-C12 and C15-C24 fragments of macrolactin A, 8949
amide –, oxazolidin-2-one bonded from chiral position 4 to resin *via* $-CH_2OCH_2C_6H_4-$ link, use in synth of (*S*)-2-methylhydrocinnamic acid, 8023
chiral enolates, nucleophilic addition with chiral iminium ion, approach to oxathiazepine ring system of eudistomin and eudistomidin alkaloids, 575
ketone lithium enolates, Michael reactions of using a chiral amine ligand, 6343
(*E*) and (*Z*) lithium –, double stereodifferentiation of aldol reactions of, models for polypropionate assembly, 1957
lithium, boron or titanium – of *N*-acyloxazolidinones, reaction with α-keto esters, synth of 2-hydroxy-2,3-disubstituted succinate derivs, 8263
magnesium enolates of alkyl hydrogen (acylamino)malonates, generation using the $MgCl_2$/R_3N base system, subsequent reaction with acid chlorides to yield α-acylamino-β-keto-esters, 3303
samarium –, catalytic enantioselective protonation using C_2-symmetric chiral diol, 2805
silyl –, diastereoselective addition to imines derived from (*S*)-valine methyl ester using lanthanide triflate, 1691
silyl enolates, Mannich-type reaction with *N*-(α-aminoalkyl)benzotriazoles, synth of the corresponding β-amino ketone or ester derivs, 3731
tin(IV) enolates, synth from allylic *O*-stannyl ketyls, reactions with alkyl halides and HMPA, 559
zinc enolate derived from chiral non-racemic 2-methoxycyclohexanone, reaction with azetidinone, synth of an intermediate to trinem antibiotics, 7441

Enols and derivs

benzo-annulated enol lactones, synth by cyclisation of the potassium carboxylates of pentynoic acids 3- or 5-substituted with an iodo-aryl moiety, 1429
enol esters derived from cyclic 1,3-diketones, cyanide catalysed isomerisation of, assembly of triketide skeleton of the antibiotic pyoluteorin, 1007
3-enol sulfonates from steroid 3-ketones using 3-oxa-octafluoropentanosulfonylfluoride, subsequent conversion to 3-carboxyl unsaturated steroids, 8553
Mn-salen catalysed asymmetric oxidation of – with iodosylbenzene as a terminal oxidant, synth of hydroxy acetals, 4389
pyrrolidinone- and piperidinone-derived enol triflates, synth and reactivity of, 8257
steric effects in reactions of aldehydes with enol diisopinocampheylborinates of methyl ketones, 4911
vinyl carbamates, synth and tandem carbolithiation-α-alkylation and 1,2-Wittig rearrangements, 6057, 6061
see also Enolates

Enones
alkenyl and unsymmetrical dialkenyl ketones, synth from 2-alkenyl-2-methoxycyclopropyl phenyl sulfones, 9305
α-alkenylation of – involving Pd-catalysed coupling of alkenylzincs with alkenyl iodides, prep of nakienone B, a marine natural product, 4679
N-alkyl-*N*-allyl-2-carboxamidocyclopent-2-enones, competition between intramolecular [2+2] photocycloaddition and hydrogen-abstraction reaction in the photolysis of, 5885
β-(10-benz[*a*]azulenyl)-αβ-unsaturated ketones, formation by intramolecular rearrangement of 2-(2-furyl)phenyltropylium ion, 4965
bis-enone tetraquinane by double Pauson-Khand reaction of 4,4-diethynyl-5,5-diallyl-2,2-dimethyl-1,3-dioxolane, 7185
Cd metal for synth of βγ-unsaturated ketones from allylic bromides and acid chlorides, 9087
β-(chiral alkoxy)-αβ–, synth by acylation of β-lithio enol ethers, 7255
chlorination and bromination using peroxysulfate and sodium halide, 2377
conjugate addition of diorganozincs to – in *N*-methylpyrrolidone, 4495
conjugated enones, electron transfer reactions with cyclopropane acetal in the presence of a redox-type photosensitiser, 1833
cross conjugated α-carbalkoxy enone system as promoter of polyene cyclisation, 8073
cyclohex-2-enones by radical cyclization of αβ-unsaturated acyl radicals, 271
cyclopentenone spiro-annulation to cyclic ketones, synth of intermediate to acorone, 1683
di- and trisubstituted enones by tandem-sequence Corey-Kwiatkowski and Horner-Wadsworth-Emmons reaction, 9177
diastereofacial selectivity of 6- and 7-substituted dihydrooxepinones and 7-substituted dihydroazepinone in addition to –, 633
dicyclopentadien-3-one, synth in (±) and (-)-forms, 205
1,4-dimethoxybicyclo[2.2.2]oct-5-en-2-one, substitution of methoxy groups by alkyl by sequence involving bicyclo[3.2.1]octane intermediates, synth of bicyclo[3.3.0]octan-3-ones and [3.3.3]propellanes, 7295
2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one, synth and use in prep of vinyl cyclopropane carboxylic acids, 7119, 7123
2,5-disubstituted furans, synth from γ-hydroxy-αβ-unsaturated ketones, 6065
enaminoketones and enaminoaldehydes, synth from chloroacroleins, 8751
from Meyer-Schuster rearrangement catalyzed by $MoO_2(acac)_2$ in DMSO or with added Bu_2SO, 853
trans fused enone as intermediate in total synth of forskolin, a labdane diterpene isolated from the roots of *Coleus forskohlii*, 1015, 1019, 1023
Grignard addition to enaminones derived from 2-methylcyclohexane-1,3-dione, 3823
hex-1-en-3-uloses, Michael addition followed by borohydride reduction in synth of 2-deoxyglycosides, 3453
hydrogenation of – using Cu/SiO_2 catalyst, 3529
4-hydroxy-cyclopent-2-en-1-ones by Horner-Wadsworth-Emmons olefination of 1,2-diketones, 1899
hydrozirconation of alkyl/aryl alkynyl tellurides, synth of α-organotelluro-αβ-unsaturated ketones, 7537
insertion and conjugate addition in Ni-catalyzed couplings of – with unsaturated functional groups, cyclizations of ω-alkynyl – and of bis–, 6839
(*R*)-5-methylcyclohex-2-en-1-one, synth from pulegone, 3125
8-methylenetricyclo[3.3.0.$0^{3,7}$]octan-2-one, 9-methylenetricyclo[4.3.0.$0^{3,8}$]nonan-2-one, $(Me_3Si)_3Si\cdot$ mediated cleavage to bicyclo[3.2.1]-oct-3-en-2-one and hydrindenone systems, 7867
Michael addition of nitroalkanes in water with cetyltrimethylammonium chloride, synth of γ-nitroketones, 8027
octadeca-3,7-diene-2,9-dione and other bis-enones, condensation with guanidine, synth of batzelladine core, 6943
oxidation of steroidal olefins to – using $RuCl_3$/t-BuOOH, 3429
5-oxocyclohex-3-ene-1,2-diol 1,2-disilyl ethers, synth from *meso*-4,5-epoxycyclohexane-1,2-diol disilyl ethers, 8057
photochemical generation of sterically congested β,β-diphenyl enones and their rearrangement to cycloheptatriene derivs, 2317
resolution of 5-hydroxytricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-2-one using chiral amines, chiral synth of tricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one, 8003
synth of pyridines from alkylphosphonates, nitriles, and αβ-unsaturated ketones, 4577
(*S*)-(+)-3-*p*-tolylsulfinylbut-3-en-2-one, oxabutadiene for asymmetric cycloaddition of styrenic compds, 3687
transfer hydrogenation by triethylammonium

hypophosphite and Ru(II) catalysts, diastereoselection, 6599
tricyclic – β-lactams by Pauson-Khand reactions, 6901
see also Chalcones, Cycloalkenones

Enynes
α-alk-3,1,5-enediynyl-α-methoxymalonate esters, hydrolysis triggering cycloaromatization to diradical *via* enynyl allene deriv, 865
allenynes, cobalt-mediated formal Alder ene reactions of, synth of six-membered carbocycles, 7027
allyl propargyl ethers, titanocene and zirconocene promoted cyclizations, synth of 3-alkylideneteterahydrofurans, 9059
enyne allenes, Diels-Alder reactions of, synth of benzofluorene and 10*H*-indeno[1,2-*g*]quinoline derivs, 999
enyne-allene thermolyses, steric effects in, switch from the Myers-Saito reaction to the C^2-C^6-cyclisation and DNA strand cleavage, 7691
(1,3-enyne)$Co_2(CO)_6$ complexes, addition of nitrile oxides to, synth of 5-alkynyl-2-oxazoline derivs, 4341
1,7- and 1,8-enynes, reaction in the presence of cobalt(I) complexes, prep of five-membered carbocycles, 7353
enynyl sulfones, radical addition of $TolSO_2SePh$, synth of 1,4-di(arenesulfonyl)-1,3-butadiene, 4161
estradiol derived enyne as potential antitumour compd, synth starting from estrone, 3395
α-haloenyne sulfones, vinylic substitution with sodium alkoxides, synth of (*E*)-α-alkoxyenyne sulfones, 7381
exo-methylene carbohydrate enynic substrates, Pauson-Khand reaction of, unexpected formation of fused "[4.1.0]bicycloheptene-pyranose" tricyclic product, 1489
penta-1,5-dien-3-ynes, cycloadditions with two molecules of dienophile, stereochemistry, mechanism, 1559
silylated enynes, intermolecular and intramolecular carbolithiation of, synth of propargylicallenes and 4- and 5-membered rings respectively, 6689, 6693
terbinafine, antifungal agent selectively inhibiting fungal squalene epoxidase, synth from amino vinyl chlorides and alkynes, 57

Enzyme and enzyme reactions
Candida rugosa lipase for resolution of 7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid methyl ester, synth of a precursor to substrates for the ring-opening metathesis polymerisation, 8853
lipase AL (Meito)-catalysed hydrolysis of the diacetate of (*E*)-2-substituted-2-butene-1,4-diol, synth of 3-alkyl-4-hydroxy-2-butenyl acetate, 91
nitrile hydratase and *amidase* for hydrolysis of 3-benzyloxyglutaronitrile, synth of (*S*)-3-(benzyloxy)-4-cyanobutanoic acid which can be transformed to (*R*)-4-hydroxy-5-cyanopentene, 6001
endo-β-*N*-acetylglucosaminidase from *Arthrobacter protophormiae*, attachment of polymannoside to a glycopeptide, 1975
alcohol dehydrogenase from *Geotrichum candidum*, enantioselective reduction of trifluoromethyl ketones, 5727
Candida antarctica lipase A for resolution of *anti*-3-oxotricyclo[2.2.1.0]heptane-7-carboxylic acid, 3975
Candida rugosa lipase, comparison of enantioselectivities from use of cross-linked enzyme crystals and crude CRL, and in aqueous *vs* organic solvents, 6507
chorismate mutase, kinetics and activation parameters for chorismate-prephenate rearrangement, 2691
chorismate mutase, thermodynamic parameters for chorismate-prephenate rearrangement and effect of enzymes from wild-type and mutant strains of *E. coli*, 8675
cytochrome P-450-dependent formation of isoandrocymbine from autumnaline in colchicine biosynth, 8161
detection of activity at trace levels using vector hybridization of tentagel-supported peptide-oligonucleotide, 175
diol dehydratase, group discrimination in *meso*-2,3-butanediol, ^2H-labelling, 4247
effect of microwave radiation on enzymic reaction rates in organic media, 8383
endoprotease papain for resolution of *Z*-γ,γ′-di-t-butyl-D,L-carboxyglutamic acid methyl ester, 417
enzymatic hydrolysis of allyl acetates to the corresponding allyl alcohols, dynamic kinetic resolution, 1859
enzymatic resolution of alcohols using 1-ethoxyvinyl acetate as a novel, highly reactive acyl donor, 7369
epoxide hydrolase, rabbit liver microsomal, enantioconvergent transformation of *cis*-dialkyl epoxides to (*R,R*)-*threo*-diols, 9089

flavoenzyme model systems, 2-acylaminopyridines as models for active sites, 4435
formate dehydrogenase, use in regenerating method of NADPH, 1377
β-D-galactosidase, use in chemoenzymatic synth of Gal(β1-3)Gal(β1-4)Xyl(β)-L-Ser and Gal(β1-3)Gal(β1-4)Xyl(β)-MU, 6763
haloperoxidases which catalyse the halogenation of organic compds, development of a molybdenum-catalysed procedure for bromination, 8609
hammerhead ribozymes incorporating 1-deoxy-1-*C*-(*p*-aniline)-β-D-ribofuranose, 6973
horseradish peroxidase oxidation of aryl amidoximes, isolation and structure of *O*-(arylimidoyl) arylamidoximes, 3113
hydrolysis of 2-hydroxymethyl-1-phenylcyclopropane-1-carboxylic acid lactone by various esterases and by fungal cell cultures, 4519
Kdo8P synthase, stereospecific synth of Kdo structure modelled on enzyme function, 3545
lactate dehydrogenase for enzymatic oxidation of L- or D-lactic acid to pyruvic acid, 7043
lipase Amano PS-30, conversion of benzyl esters into *N*-alkyl amides, 7913
lipase Amano PS-30 for resolution of hydroxymethyl cycloheptatriene $Cr(CO)_3$ complexes, [6+4] photocycloadditions to dienes, synth of chiral bicyclo[4.4.1]undeca-2,4,8-triene systems, 5293
lipase from *Candida antarctica*, enantioselective hydrolysis of bis(trifluoromethyl)alkanediol diacetates, 5001
lipase from *Candida rugosa* for separation of *cis*- and *trans*-4-substitutedcyclohexanecarboxylates, 9029
lipase from pig pancreas as catalyst for hydrolysis of alkane-1,n-diol bis-acetates into the corresponding monoacetate, 625
lipase from *Pseudomonas cepacia*, enantioselection of transesterification in iPr_2O improved by addition of crown thioether, 4991
lipase from *Pseudomonas fluorescens* for asymmetrizing *syn, syn* and *anti, anti* 2,4-dimethylpentane-1,3,5-triols, 2773
lipase My, *trans,anti,trans*-2,6-dimethylcyclooctane-1,5-diol asymmetrization using lauric acid, 7565
lipase PS catalysed dynamic kinetic resolution of 5-hydroxy-2(5*H*)-furanones, 4759
Lipozym IM for asymmetrization of 3,6-di(hydroxymethyl)hexahydropyridazine derivs, synth of azapurpurosamine C, 7951
liver acetone powder for capsaicin synth from vanillylamine and fatty acid esters, 2789
malonyl-coenzyme A:21-hydroxypregnane 21-hydroxy-malonyltransferase from *Digitalis lanata* leaves, role of enzyme in cardenolide biosynth, 2221
Nocardia EH1 epoxide hydrolase, enantioconvergent enzymatic synth of (2*R*,3*R*)-2,3-heptanediol from (±)-*cis*-2,3-epoxyheptane, 8379
pancreatic cholesterol esterase, inhibition by 4-nitrophenyl *N*-alkyl carbamates, LFER study, 193
papain, use in synth of peptides containing carboxyglutamic acid in organic media, 3609
penicillin amidase, control of enzyme hydration in amide bond formation, 9377
penicillin G acylase on Eupergit C, for selective enzymic removal of phenylacetamido protecting groups from phosphopeptides, 8725
phosphodiesterases, *Crotalus* and bovine spleen, action on 3′-thiouridylyl-(3′→5′)-uridine, 925
phthalyl amidase for selective deprotection of phthaloylamines, 7469
Pseudopterogorgia americana acetone extract, use in ring C secosteroid synth, 8301
ribonuclease A, imidazole-acridine conjugates as mimics of, 4417
serine acylases for resolution of amines and amino alcohols using pent-4-enoyl derivs, 6287
sphingosine kinase, purification by use of and affinity column prepared by coupling of *erythro*-ω-aminosphingosine to Affi-Gel 10, 3279
sterol methyl transferases of *Zea mays*, isotope effects demonstrate 24(28)-methylene cycloartanol and cyclosadol formed by different enzymes, 6823
subtiligase, mutant of the serine protease subtilisin BPN′, use with glycolate ester peptide substrates for the assembly of *de novo* designed multimeric proteins, 6653
subtilisin BPN′, use for acetyl transfer to prepare 9-*O*-acetylneuraminic acid and 9-*O*-acetyl-GD3, melanoma antigen, 9271
subtilisin-CLEC for synth of alkylamides of aminoacids and peptides, 5317
Taka-amylase A for specific cleavage of the glucose-wall of $6^A,6^D$-di-*O*-(*p,p′*-biphenyldisulfonyl)-β-cyclodextrin, synth of cyclic compds composed of glucoses and biphenyl, 4035
L-tryptophan 2′,3′-oxidase, configuration of *N*-acetyl-α,β-dehydrotryptophan ethyl ester produced by − from *Chromobacterium viola-*

ceum, 3309
tyrosinase in hydroxylation of phenols, oxidation and Diels-Alder reaction cascade, 3833
Uroporphyrinogen III synthase, synth of a bilane with a meso sulfur bridge which is a substrate for the synthase, 2891
various lipases as catalysts for resolution of racemic 2-hydroxymethyl-1-methylthioferrocene, 127

Enzyme inhibitors
β-acarbose, carba-tetrasaccharide, synth of 6"-hydroxy derivative as potential –, 2479
activation and inactivation of glycogen synthase by 6*R*- and 6*S*- C6-*C*-methyl glucose respectively, 7155
adenosine-5′-*N*-ethyluronamides with modified 6-amino group, synth as adenosine receptor agonists, 1567
allosamidins, pseudo-tri- and disaccharide chitinase inhibitors, synth of glucoallosamidin pseudo-disaccharide from cyclopentadienylthallium, 599
amidine-linked pseudo-disaccharide, powerful inhibitor of *exo*-glucosidases, construction of by two routes, 5921
andrastins A-C, protein farnesyltransferase – from *Penicillium* sp., structure, 1265
apicidin, cyclic tetrapeptide isolated from *Fusarium pallidoroseum*, inhibitor of apicomplexan histone deacetylase, 8077
D-arabinohydroxamic acid 5-*O*-phosphate, synth as a transition state analogue – of glucose-6-phosphate isomerase, 1221
bafilomycin A_1, inhibitor of vacuolar H^+-ATPase, synth of C5-C11, C12-C17 and C18-C25 segments and total synth by convergent route, 1069, 1073
batzelline C, isobatzelline C, discorhabdin C and makaluvamine D, inhibitors of topoisomerase, synth from 6,7-dimethoxy-4-methyl-5-nitroquinoline, 1509
carbon-nitrogen and carbon-sulfur linked pseudodisaccharides incorporating a hydroxylated pyrrolidine type glucosidase inhibitor, synth by nucleophilic opening of D-mannitol derived bis-aziridines, 5095
castanospermine and australine analogues, glycosidase inhibitors, synth by reaction of cysteamine with D-ribofuranose and subsequent cyclisation, 49
chiral hydroxyurea as an inhibitor of 5-lipoxygenase, synth by addition of dimethylsulfoxonium ylid to a nitrone bearing a mannose-derived auxiliary, construction of dihydrobenzofuran skeleton by cyclisation, 4639
cyclophellitol, carbasugar deriv with β-glucosidase inhibitory action from mushroom *Phellinus* sp., synth from 7-oxabicyclo[2.2.1]hept-5-ene-2-*endo*-carboxylic acid, 3043
cyclotheonamide A, cyclic pentapeptide and inhibitor of serine proteases from Japanese marine sponge *Theonella* sp., transformation to a ring-opened product by treatment with sodium carbonate or triethylamine, 3667
cyclotheonamides, proteinase inhibitors from marine sponge *Theonella*, synth of cyclotheonamide B *via* guanidination of ornithine, 2261
cytochalasins, HIV-1 protease –, synth of novel structures, 4113
deacetyl caloporoside, phospholipase C inhibitor, synth, 2453
deoxymannojirimycin, polyhydroxylated piperidine alkaloid glycosidase inhibitors, asymmetric synth by kinetic resolution of an α-furfurylamine deriv, 1461
1,5-dideoxy-1,5-(alkyl)imino-2-*C*-methyl-D-glucitols, deoxynojirimycin analogues, synth as α-glycosidase inhibitors and antiviral agents, 1355
(3*S*,4*S*)-3,4-dihydroxy-3-hydroxymethylpyrrolidine, synth of a ribofuranosyl cation mimic, glycosidase and PNPase –, 2097
E-selectin –, aryl cyclohexyl ether as a disaccharide scaffold, 3785
1-ethoxymethyl-5-nitro-6-substituted uracils as potential HIV-1 reverse transcriptase inhibitors, synth, 1031
farnesyl and geranylgeranyl pyrophosphate analogues incorporating benzoylbenzyl ethers as inhibitors of farnesyltransferase, 8833
β-glucuronidase –, synth of branched imino-sugar with perhydronicotinic acid skeleton, 2707
hepatitis C virus proteinase – Sch 68631, phenanthraquinone antibiotic from *Streptomyces* sp., 7229
HIV-1 aspartic protease –, synth of 1,4-diazepane-2,3-diones, 1153
D-*arabino*-hydroxamic acid and D-threonohydroxamic acid, inhibitors of D-xylose isomerases, synth by from D-arabinose, 2237
(1′*S*,2*R*,3*R*,4*R*,5*S*)-2-(1′-hydroxy-2′-propenyl)-piperidine-3,4,5-triol (deoxynojirimycin analogue), synth from castanospermine as inhibitor of glycosidases, 8573
indolmycin, tryptophanyl tRNA synthetase inhib-

itor, synth of conformationally restricted analogues of from a 4-functionalised indole, 3067
inhibition of glucokinase and/or glucose-6-phosphatase by epimeric C6-*C*-methyl glucoses, 7155
inhibition of lanosterol synthase by a tetracyclic ammonium ion, a structural analogue of the protosterol cation, indicates that the cation is not strongly bound by the enzyme, 3287
inhibitors of DNA topoisomerase, semisynth of RPR 121056A, a major metabolite of irinotecan (CPT-11) which is a deriv of camptothecine, 6327
5-lipoxygenase inhibitor L-739,010, synth involving lithiation of 2,6-dibromopyridine, 2537
moenomycin A deriv prepared by reaction with *o*-nitrobenzenediazonium chloride, as *in-vitro* transglycosylase inhibitor, 5087
nodularin, hepatotoxic protein phosphatase –, synth of analogues, 6915
nostocyclin, 3-amino-6-hydroxy-2-piperidone-containing cyclic peptide, inhibitor of protein phosphatase-1 activity, 6725
NPF and W-68, DNA topoisomerase II inhibitors, synth by employing $Bu_4N^+I^-$ in the displacement of the 4-bromoepipodophyllotoxin, 3359
protease inhibitors, tripeptide α',β'-epoxyketones as inhibitors of the chymotrypsin-like activity of porcine endothelial cell derived proteasome, 1343
(+)-pyripyropene, acyl-CoA:cholesterol transferase –, biomimetic synth, 6461
Sch 65676, fungal metabolite with inhibitory activity against the cytomegalovirus protease, 3943
sphingosine, inhibitor of protein kinase C, synth of *erythro*-ω-aminosphingosine from L-serine and its coupling to Affi-Gel 10 to create an affinity column for sphingosine kinase purification, 3279
squalene synthetase –, zaragozic acid, synth of bicyclic core *via* epoxide cyclization, 8803
squalestatins, fungal metabolites with inhibitory activity against squalene synthase, synth of the C-4 carboxamide derivs, the C-4 amides and C-4 hydroxymethyl derivs, 8925
staurosporine, indolocarbazole with kinase inhibitory activity, synth of desamido analogues RK-286c and Tan-1030a, 7335
β-sulfonopeptides bearing a taurine in place of a penultimate amino acid unit as inhibitors of D-alanyl-D-alanine transpeptidases, 4663
L-(+)-swainsonine, dihydroxy-L-swainsonines and piperidine analogues of L-rhamnose as inhibitors of naringinase (L-rhamnosidase), synth, 8561, 8565, 8569
terbinafine, antifungal agent selectively inhibiting fungal squalene epoxidase, synth from amino vinyl chlorides and alkynes, 57
tyrosine phosphatase – RK-682, tetronic acid deriv, synth, 8775
vigabatrin (4-amino-5-hexenoic acid), inhibitor of GABA-T (GABA transaminase), synth from butadiene monoepoxide, 9161
wortmannin, PI 3-kinase –, synth from dihydrocortisone, 6141
yeast protein farnesyltransferase, photo-inactivation by benzoylbenzoate analogues of farnesyl pyrophosphate, 4845

Epimerisation

cis-1-aryl-2,5-dimethylpiperazine from *trans*-2,5-dimethylpiperazine and 4-methoxyanisole under Pd(II) coupling conditions, 4463
– of axial- to equatorial-2-lithio-4,6-dimethyl-1,3-diselenanes, 8015

Epoxidation

β – of 3β-acetoxy-Δ^5-unsaturated steroids with potassium permanganate-metal sulfates and nitrates, 687
of alkenes with dimethyl dioxirane, non polar concerted mechanism, 5991
– of (±)-3-alkylindenes by chiral Mn(III)-salen analogues, 4533
asymmetric – of indene catalysed by the MnLCl/NaOCl system, effect of addition of 4-(3-phenylpropyl)pyridine *N*-oxide, 3271
asymmetric – of olefins catalyzed by Mn-picolinamide-salicylidene complexes, 2725
chiral Mn(III)-picolinamide-salicylidene complex for asymmetric – of olefins, 2725
chiral Ru porphyrin as enantioselective styrene – catalyst, 7325
chromenes, chiral catalytic – using Mn(III) salen/NaOCl, effect of donor ligands, 3887
competition between – and *O*-dealkylation in reaction of isosafrole with sodium hypochlorite catalysed by manganese porphyrins, 1091
convenient reagent chloral hydrate/H_2O_2, application to steroidal olefins, 8349
copper-catalysed olefin – by dioxygen or amine *N*-oxide, 8497
diastereospecific – and kinetic resolution of *cis/trans*-2,6-dimethylbenzylidene cyclohexane, 8447
2-(dimethylphenylsilyl)alk-3-en-1-ols, asymmetric induction in –, 1205

enantioselective – of functionalised and unfunctionalised olefins using *m*-chloroperbenzoic acid in liposomised form, 4751
π-facial selectivity in – of bicyclo[2.2.2]oct-2-enes with 5,6-*cis*-*exo*-substituted electron withdrawing groups, 1321
2-hydroxybut-3-enyl *p*-nitrobenzoate, Sharpless – using diisopropyltartrate as chiral auxiliary, 7929
of α-isophorone with hydroperoxides, comparison of several heterogeneous catalysts, 5995
nucleophilic – of 1-arylthio-1-nitroalkenes, synth of *anti*-β-amino-α-hydroxy acid derivs, 2311
nucleophilic – of vinyl sulfoxides bearing oxygenated substituents at allylic positions with MOO-t-Bu, 6793
regio- and stereo-selective – of alkenes by methyl trioxo-rhenium and urea-hydrogen peroxide, 2717
of simple olefins and allylic alcohols catalysed by WO_4^{2-}-exchanged LDH, 8557
steroidal allene – to a bis-epoxide using dimethyldioxirane, 3417
of unfunctionalised olefins using a polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst, 3375
of unprotected olefinic carboxylic acids using $HOF.CH_3CN$, 531
uracil derivs catalysed by dimethyldioxirane-Mn(C116)TDMPPCl porphyrin, 2647

Epoxides
alisamycin, a manumycin antibiotic amino–epoxycyclohexenone with polyene side chains, synth, 6619
azidolysis using 1,1,3,3-tetramethylguanidinium azide, synth of β-azidoalcohols, 1675
(3-bromo-4-pyridyl)triisopropoxytitanium, reaction with *N*-benzylindole-2,3-dicarboxylic anhydride, synth of 2-(3-bromoisonicotinoyl)-indole-3-carboxylic acid which could be converted to ellipticine, 7753
bromo-diepoxides, AgOTf-promoted ring expansions to 3-triflyloxy-perhydropyrano[3,2-*b*]pyrans, 6173
butadiene monoepoxide, starting material for four step synth of vigabatrin (4-amino-5-hexenoic acid), 9161
chemoenzymatic resolution and deracemization of (±)-1-methyl-1,2-epoxycyclohexane, synth of (1*S*,2*S*)-1-methylcyclohexane-1,2-diol, 8819
conversion to the corresponding β-halohydrins with lithium halides supported on silica gel in dry media, 1845
α-cyano α-alkoxy carbonyl epoxides, reaction with hydroxylamine hydrochloride, synth of β-alkoxy α-oximino esters, 4693
(8*R*,9*S*,10*S*)-9-deoxy-8,9-epoxy-10-hydroxydauno rubicin, antitumour compd, synth from daunorubicin, 1123
gem-dicyano –, conversion into α-chloro-hydroxamic acids, 179
(15*S*,16*R*,19*S*,20*R*,34*S*)-diepomuricanin, annonaceous acetogenin, synth, 5393
1,4:2,3-diepoxycyclohexane derivs, Lewis acid-catalyzed rearrangement to cyclopentane derivs, 2877
diethynyl oxiranes, Pd-catalyzed coupling of alkenyl iodides, synth of epoxy enediyne intermediates related to neocarzinostatin chromophore, 9335
2,3-di(mannoepoxido)-β-cyclodextrins, formation of diimidazolyl dideoxy-β-cyclodextrins, 7561
enantioconvergent transformation of *cis*-dialkyl – to (*R*,*R*)-*threo*-diols using rabbit liver microsomal epoxide hydrolase, 9089
enantiopure epoxides and vicinal diols, synth by enantioselective hydrolysis of epoxyindene and dihydronaphthalene epoxides by the fungus *Beauveria sulfurescens*, 3319
enediynes with epoxide trigger, synth of esperamycin core, and of an esperamycin-dynemycin hybrid,, 8683, 8687
epichlorohydrin, dynamic kinetic resolution in enantioselective catalytic ring-opening by TMS-N_3/(salen)Cr(III)-N_3, synth of chiral oxazolidinones, 7937
epoxides generated from cyclic ene carbamates as effective *N*-acyl iminium ion precursors in synth of α-substituted, β-hydroxy piperidines and pyrrolidines, 3255
α,β-epoxy aldehydes by deblocking of oxazolinyl oxiranes derived from treatment of 4,4-dimethyloxazolinylchloromethyllithium with aldehydes, 4777, 4781
α,β-epoxy ketones, photoinduced electron transfer with 2-phenyl-*N*,*N*-dimethylbenzimidazoline, synth of corresponding aldols, effect of water on reaction, 7079
α-(1,2-epoxyalkyl)-αβ-unsaturated sulfoxides, chiral synth and S_N2' reactions with organocyanocuprates, 8031
epoxyamides derived from 1-tetralones, acidic hydrolysis to yield 2-tetralones, 3243
3,4-epoxybutane-1,2-diols, synth and separation

of optically pure metabolites of 1,3-butadiene, 7929
cis- and *trans*-4,5-epoxycyclohexane-*cis*-1,2-diol disilyl ethers, chiral base mediated rearrangement to cyclohex-5-ene-1,2,4-triol 1,2-disilyl ethers, stereochemistry, 8057
epoxyenynes by coupling of ethynyloxiranes to enol triflates using Pd(0) and Ag(I) catalysis, 2019
(±)-*cis*-2,3-epoxyheptane, enantioconvergent enzymic hydrolysis to (2*R*,3*R*)-2,3-heptanediol, 8379
2,3-epoxypropyl amines, ring-opening and alkylation by organo-Al reagents, synth of 2-substituted 3-amino alcohols, 6177
formation of a chrysene triepoxide with dimethyl dioxirane, structure, 8671
methyl (2*Z*,6*R*,8*R*,9*E*)-3,6-epoxy-4,6,8-triethyl-2,4,9-dodecatrienoate from Caribbean sponge *Plakortis halichondrioides*, absolute configuration of, 6681
2-methylene-6-(4,8,12-trimethyl-3,7,11-tridecatrienyl)-3,7-epoxyheptanoic acid (rhopaloic acid A), norsesterterpene from marine sponge *Rhopaloeides* sp., 2265
olefinic epoxy alcohol, treatment with diethylaluminium fluoride, synth of 2-hydroxymethyl-4-methylene-cyclohexanol, 3
optically active α,β-epoxysilanes, synth from the corresponding chiral diols, 555
Pd-switchable reactions, dimethyl 2-stannylallylmalonate coupling with vinyl epoxides, dependence of mode (orientation) of cyclization on catalyst, 6591
perfluorobutanesulfonyl fluoride/DBU for formation of − from 1,2-diols, 7497
phenyl-substituted and alkyl-substituted epoxydisilane, rearrangements to β-trimethylsilylacylsilane and silanols respectively, 5613
reactions with indole catalysed by ytterbium(III) trifluoromethane sulfonate, application to synth of (+)-diolmycin A2, 3727
stereocontrolled synth of *syn*- and *anti*- 3,4-epoxy-1,2-diols of triphenylene, 8267
substituted − by alkylation of oxiranyllithium compds by reaction with α-alkoxy alkyl triflates, 2605, corrig. 6959
δ-(sulfonylamino)-α-epoxy ketones, conversion to bicyclic ketopyrroles *via* intramolecular conjugate-addition to azoene intermediates, synth of bicyclic core of the 1-azafulvene roseophilin, 2545
synth of *N-aryl*-β-phenylisoserine derivs *via* epoxidation of cinnamic esters or amides, 7311
1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldioxy arene systems, stereo- and regioselective ether-ring opening of with boron tribromide, 3651
1-trifluoromethyl-2-phenyloxiran, chiral synth involving phenylthio-alcohol intermediate, 3903
tripeptide α′,β′-epoxyketones as inhibitors of the chymotrypsin-like activity of porcine endothelial cell derived proteasome, synth from Boc-[*S*]-phenylalanine, 1343
vinylic epoxides, kinetic resolution by reduction with chiral dialkylboranes, 7131
zaragozic acid, synth of bicyclic core *via* − cyclization, 8803
see also Oxiranes

Esterification
of aromatic carboxylic acids by treatment with alcohols in the presence of thionyl chloride, 6375
benzhydryl (diphenylmethyl) ester group, introduction and removal, $A_{AL}2$ mechanism under acid catalysis, 1965
cephalosporin C-9 carboxylates, − using vinyl and *p*-methoxybenzyl diazomethane, 1971
monoesterification of α,ω-dicarboxylic acids catalysed by ion-exchange resins, 6733

Esters
8-*endo versus* 5-*exo* cyclisation of unsaturated acrylate esters upon reaction with t-BuHgI/KI, 2557
acrylate esters from monobenzylated isosorbide or isomannide, Diels-Alder reactions of, 7023
α-alk-3,1,5-enediynyl-α-methoxymalonate esters, hydrolysis triggering cycloaromatization to diradical *via* enynyl allene deriv, 865
β-alkoxy α-oximino esters by reaction of α-cyano α-alkoxy carbonyl epoxides with hydroxylamine hydrochloride, 4693
alkyl esters, selective deprotection of using magnesium methoxide, 455
allylic −, allyl esters, deprotection of acid using sulfated SnO_2, 237
allylic esters, Claisen rearrangement of mediated by silyl triflate, stereochemical control in, 3005
β-amino esters by three-component reactions of aldehydes, amines and silylated nucleophiles, 9221
amino esters, oxidation and chiral recognition of by dioxoruthenium(VI) porphyrins, formation of new imino ester Ru(II) complexes, 6701

α-amino phosphonate monoesters, synth from phosphonic acid using BroP or TPyC1U as activating agent, 3997
aromatic carboxylic esters by treatment of carboxylic acids with alcohols in the presence of thionyl chloride, 6375
aryl acrylates in Baylis-Hillman reactions, synth of 5-methylene-1,3-dioxan-4-ones, 1715
benzhydryl (diphenylmethyl) –, introduction and removal, $A_{AL}2$ mechanism under acid catalysis, 1965
benzoylbenzoate esters as farnesyl pyrophosphate analogues, photo-inhibition of yeast protein farnesyltransferase, 4845
benzyl esters, conversion into *N*-alkyl amides using Amano PS-30 lipase, 7913
by oxidation of ethers on photo-irradiation with benzil and oxygen, 4179
cinnamic – synth in phosphine-free Heck reactions catalyzed by preformed Pd and Pd/Ni clusters, 4499
cleavage of using organotin oxides and hydroxides, comparison of classical and microwave heating, 5229
deconjugation and anion reactions of αβ-unsaturated –, stereochemistry, role of base and solvent, 5261
diethyl α-alkynylmalonates, synth in approach to enzyme inhibitors, 861
1,3-diphenyl-2-propenyl acetate, enantioselective allylic substitution using the sodium salt of dimethyl malonate and (phosphino-1,3-oxazine)-palladium catalyst, 9143
enzymic (CAL) enantioselective hydrolysis of bis-(trifluoromethyl)alkanediol diacetates, 5001
ethyl (*E*) and (*Z*)-3-aryl-3-phenylpropenoates, synth by reaction of ethyl cinnamate with *para*-substituted aryl iodides and iodobenzene respectively under Jeffery-Larock conditions, 7449
from maleic anhydride moiety of cornexistin using trimethylsilyldiazomethane, 1967
glycosyl trichloroacetates as glycosyl donors in synth of hexasaccharide containing lactosamine unit, 8549
halogen transfer addition of methyl 2-bromo-2-chlorocarboxylates to olefins, 2077
Pd-mediated alkoxycarbonylation of 2-chloroquinolines, 8281
naphthyl esters, photo-Fries reaction of within zeolites, 6251
pentafluorophenyl –, protection/activation of amino and thiol acids as, 4915
phosphite triesters from cyclic phosphoramidites using 2-bromo-4,5-dicyanoimidazole as a catalyst and from a bicyclic imidazo-oxazaphosphorine, 969, 973, 977
pinyl substituted Hantzsch ester, reaction with dimethylaluminium amide, formation of NADH model compds, subsequent reduction of methyl benzoylformate with these models yielded both enantiomers of methyl mandelate, 3275
squarate esters, reactions with alkenyl anions, responsibility of helical equilibration within the advanced octatetraene intermediate for stereochemical control, 3299
t-butoxycarbonylethylation of polyols under PTC, 1237
O-trichloroacetimidates, synth by reaction of the substrate with trichloroacetonitrile in dichloromethane and potassium hydroxide containing catalytic tetra-n-butylammonium hydrogen sulfate, 1481
αβ-unsaturated –, radical coupling with alkyl iodides using Ni_2B-borohydride exchange resin in MeOH, 3137
αβ-unsaturated –, synth from aldehydes and lithio-ketene diethyl acetal, 2771
αβ-unsaturated, by silica gel catalyzed Wittig reactions of aldehydes with methoxycarbonylmethylene phosphoranes, 1281

Ethers

2-(1-alkoxyalkyl) alk-2-enols, synth from Ti complexes of propargyl ethers, 7275
allyl ethers, selective cleavage of to alcohols by use of $Ti(O\text{-}i\text{-}Pr)_4$ and a Grignard reagent, 3663
allyl propargyl –, titanocene and zirconocene promoted cyclizations, synth of 3-alkylidenetetrahydrofurans, 9059
anion exchange resins for synth of mixtures of aryl and heteroaryl ethers, 5257
aryl alkyl – by regioselective substitution of fluorine in fluorobenzenes, 6439
aryl cyclohexyl – as a disaccharide scaffold in E-selectin inhibitor synth, 3785
2-aryloxy acids from lactamide-derived esters of racemic α-halocarboxylic acids, 2683
benzyl/allyl alkyl ethers by reaction of alcohols with magnesium to produce magnesium alkoxides which can be treated with benzyl chloride or allyl bromide, 5159
3-benzyloxy-1-isocyanopropenes, synth and use as 3-hydroxypropanoyl anion equivalents, 2437
calculation of transition states for methanol addition to pentadienyl cations, stereochemistry of intramolecular ether cyclization, 1257
chlorinated diaryl – and triaryl di–, arene-Ru

complexes in selective synth, 735
α-chloroalkyl α′-chloroalkyl ethers, reaction with samarium reagents, synth of carbonyl ylids, 9241
cyclic –, synth by Mitsunobu cyclizations, 2463
cyclic aryl –, formation by cyclic alkoxylation of aromatic ring using $PhI(OAc)_2/I_2$, 2441
cyclic ethers by intramolecular reaction of aldehydes with oxo-substituted allenyl- and propargylstannane, 3059
dehydrodimerizations of cyclic ethers, Hg-sensitized, formation of monocyclic products produced by opening of one ring, 6853
deprotection of 4-methoxy- and 3,4-dimethoxybenzyl – using $FeCl_3$ with catalytic DDQ, 1645
Si-Li exchange and Wittig-Still rearrangement in trimethylsilylmethyl allyl ethers, 2403
formation of ether derivs of phenolic containing structures using solid phase Mitsunobu chemistry on functionalised polyethylene pins, 3019
lactol-derived allylic ethers, ene-type reaction of catalysed by silyl triflates, synth of propionaldehyde-substituted tetrahydrofuranes and -pyrans *via* the cyclic oxonium intermediate and allyloxysilyl moiety, 3705
methoxyethoxymethyl 2-benzenesulfonyl-2-tributylstannylcyclopropyl –, conversion into 3-acylfurans, 4585
methyl aryl –, trifluoroacetylation using TFAA with $CoCl_2$ catalysis, 4511
oxidation to esters by photo-irradiation with benzil and oxygen, 4179
oxidative deprotection of allyl – using DDQ, 6603
phenolic silyl –, mild Pd-catalyzed desilylation, 153
1-phenoxy-2-trimethylsilyloxy-1,3-butadiene, synth and Diels-Alder reactivity, synth of cyclic silyl enol ethers and α-phenoxy-ketones, 6951
phenylthioalkyl oxetane and phenylthio-tetrahydrofuran equilibrations with PhS migration, 3525
polyethylene glycol inert crosslinked supports, POEPOP and POEPS, for solid-phase synthesis, synth of a pentapeptide, 6185
spiro-–, synth by photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones, 3521
1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldi oxy arene systems, stereo- and regioselective ether-ring opening of with boron tribromide, 3651
tetrahydrofuran, incorporation into ester formed from vinyldiazomethane and a cephalosporin carboxylate, formation of 4-allyloxybutyl ester, 1971
2-tetrahydropyranyl ethers of alcohols and phenol, formation and deprotection in the presence of heteropoly acids, 8597
O-(tetrahydropyridinomethyl)-*o*-bromophenols, radical cyclization forming spiro-fused piperidines, 5233
tributylstannylmethyl allylic ether bearing an alkoxy function on the side chain, Still-Wittig rearrangement of, synth of *Z*-disubstituted olefins, 389
1-[(2-trimethylsilyl)ethoxy]ethyl group as protecting group for hydroxyl groups, synth from an alcohol and 2-(trimethylsilyl)ethyl vinyl ether, 3647
see also Oxygen heterocycles

Exchange reactions
alkenylzinc reagents by the reaction of alkenyl tellurides with diethylzinc, subsequent cross-coupling with 4-iodotoluene, 4741
aromatic N-N – of *N,N*-dimethylamino *gem*-difluorinated heterocycles, synth of 5-imidazol-1-yl α,α-difluoroketones, 5119
ligand – of β-[[(trifluoromethylsulfonyl)oxy]-vinyl](phenyl)-iodonium triflates with aryllithiums, synth of (aryl)(phenyl)iodonium triflates, 3721
ligand exchange reaction between (tricarbonylchromium)naphthalene and a dibenzannulene, synth of bis-complexed large ring benzannulene, 6665
sequential metalation and metal-halogen exchange of 3,5-dibromopyridine, synth of 4-alkyl-3,5-dibromo-, 3-bromo-4,5-dialkyl- and 3,4,5-trialkylpyridines, 2565

Expansion reactions
of 2-vinylbicyclo[2.2.2]octenols, synth of *cis*-decalin and bicyclo[4.2.2]dec-7-en-4-one derivs from 2-methoxyphenols, 5897

Extrusion reactions
Ramberg-Bäcklund reaction in synth of *ortho*-condensed six-, seven-, eight- and nine-membered rings with one O atom and one double bond, 2865
sulfur dioxide – from dithia-*m*-carboranophane tetroxide in synth of [8]-*m*-carboranophane, 7221

Favorskii reactions, Favorskii-like ring contraction of 1,3,4-oxadiazinone to a bimane, 5039
Fenestranes, *cis,cis,cis,trans*-[5.5.5.5]-fenestranes,

three-step synth from toluic acid derivs using arene-alkene photocycloaddition-radical cyclisation cascade sequence, 7687

Ferrocenes

bis(*o*-diphenylphosphino-oxazolin-2-yl)ferrocenes, chiral ligands for Pd-coordination in allylic substitutions, 4545

C_2-symmetrical diaminoferrocenyl derivs and 2-amino(sulfonamido)cyclohexanes as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165

chiral 1,1′-di(2-oxazolinyl) –, effect of solvent and lithiating agent on stereoselectivity in diphenylphosphino group introduction, 6137

1,1′-dicarboxylic acid, bis-aminoacid derivatives, ordered conformation modelling H-bonding in a polypeptide antiparallel β-sheet, 5289

1- and 1,1′-ferrocenepropanoic acids, asymmetric synthesis from ferrocenyl ketones, 7861

β-ferrocenylvinylheterocumulenes and ferrocene-containing imidazole rings, synth from β-ferrocenylvinyliminophosphoranes by aza-Wittig reactions, 7829

2-hydroxymethyl-1-methylthioferrocene, lipase-catalysed resolution of the racemate of, 127

C_2-symmetric dimethyl 2,2′-bisdiphenylphosphinoferrocene-1,1′-dicarboxylate, synth and use as chiral ligand in Pd-catalyzed allylic alkylation, 7995

C_2-symmetrical 1,1′-ferrocenyl diols by CBS-reduction of ferrocenyl diketones, 25

Flavins

10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido-[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione, inclusion complex with urea and ethanol, 8905

inter– electron transfer in ground state and in absence of external electron donors/acceptors, UV of products, superoxidized – and flavosemiquinone, 7885

NMR determination of H-bonding between – and 2-/2,6-di-acylaminopyridines, 4435

Flavones/flavanones

(*E*)-3-benzylideneflavanones, formation of 3-(α-hydroxybenzyl)flavones using NBS/Bz_2O_2, 8001

Flavonoids

(+)-brazilin, homoflavonoid, deoxygenation to (+)-brazilane, 2421

Flavours and fragrances

castavinols, glucoside polyphenol series from Bordeaux red wines, structures, 7739

cis-jasmone, synth *via* 2-oxohept-4-ynal and 3-ethoxycarbonylprop-2-enylidene triphenylphosphorane, 5735

nor-norambracetal, compd with ambergris fragrance, synth from sclareol *via* γ-homobicyclofarnesylic alcohol, 3695

Fluorenes/fluorenones

benzo[*b*]fluorenone by annulation of indenone with phthalide sulfone, potential route to kinamycin antibiotics, 2641

benzofluorene and 10*H*-indeno[1,2-*g*]quinoline derivs, synth by Diels-Alder reactions of enyne allenes, 999

bridged 2,3,4,4a-tetrahydro-1*H*-fluorenes, synth from nopinone and β-methylverbanone *via* Nazarov reaction of derived allylic benzyl alcohol, 7241

N-(9-phenylfluoren-9-yl)-alanine oxazolidinone, reaction with organolithium reagents, synth of α-amino ketones and alcohols, 3403

rigidly-linked 4,5-diazafluorenes, new molrac bidentate ligand systems, synth by 1,3-dipolar cycloaddition of 9-diazo-4,5-diazafluorene onto the π-bond of the molrac, 2157, 2161

Fluorescence

anthracene fluorophore, covalent grafting onto the surface of silica starting from aminopropyl silicagel, 7039

aqueous ratiomeric fluorescence probe for Zn(II), 2193

Benesi-Hildebrand plot for dimerization of phosphate diaryl esters with binaphthol phosphate, 1925

bimanes, fluorescent compds, synth by Favorskii-like ring contraction of 1,3,4-oxadiazinone, 5039

of a [2.2](3,3′)biphenylo(3,6)phenanthrenophene, mixed [2.2]cyclophane, 3877

chiral *meso*-aminoporphyrin derivs, fluorescence in cells for use in PDT, 7511

disymmetrical coronand containing two different subunits, synth and cation complexing props, 5499

exciplex – in inclusion complexes of naphthalene derivatives, 4833

fluorescence properties of 2,2′-bithiazolyl-*p*-t-butylcalix[4]arene podands, 5889

fluorescence sensing of alkali metal cations using a pyrene-appended calix[4]crown-4, 77

four-α-helix bundle 57-peptide structure with alternating D and L segments, synth, CD, –, 881

novel porphyrin arrays directly linked through the *meso* carbons, UV, – spectra, 8399

4-phenylethynylpyridine-2,6-dicarboxylate forms highly fluorescent beads when attached to

polymer and complexed with Eu^{3+}, 6483
meso-tetra-(4-carboxyphenyl)porphyrin Na salt, 1:2 complex with permethylated β-cyclodextrin in water, 8019
tetrafluorofluorescein as fluorescent marker for protein SH groups, 7905
Fluorine and compds
β-amino-α,α-difluoroketones, synth by reactions of 1,1-difluorovinyl methyl ethers with *N*-acyliminium salts derived from reaction of biscarbamates with trifluoromethanesulfonic anhydride, 1061, corrig. 2515
trifluoromethyldiallylcarbinol or (d,l)-1-trifluoromethyl-2,5-divinylcyclopentanol, synth by addition of allyltrimethylsilane or 1,8-bis(trimethylsilyl)-2,6-octadiene and trifluoroacetic anhydride, 5107
3,3,3-trifluoropropanoic acid, synth and subsequent Vilsmeier-Haack reaction to yield the β-trifluoromethyl vinamidinium salt 1,1,5,5-tetramethyl-1,5-diaza-3-(trifluoromethyl)-1,3-pentadienium chloride, 1829
2-(acetoxymethyl)-1,1-difluoro-3-(trimethylsilyl) prop-1-ene, preparation and uses, 5401
α-alkoxy-α-fluoromethanephosphonates, synth and incorporation into acyclic phosphonate nucleosides, 8975
asymmetric Henry (nitroaldol) reactions of α,α-difluoroaldehydes catalyzed by lanthanide lithium BINOL complexes, 9081
benzylic indanol- and tetralol-$Cr(CO)_3$ complexes, DAST fluoro-dehydroxylation, 5691
bistrifluoroethylanilines from aroyl azides with $NaBH_4$/TFA, 7213
1:1 and 1:2 complexes of TBAF and $BF_3.Et_2O$ as reagents for removal of trialkylsilyl groups from silyl ethers, 509
3-deoxy-3-fluoro-D-*myo*-inositol 1,4,5-trisphosphate and analogues, synth, 1917
diethylaminosulfur trifluoride (DAST), reaction with α-fluoro-α-phenylthio-β-hydroxyesters with SPh migration, formation of α,α-difluoro β-phenylthio esters, and subsequent synthetic reactions, 8759
(diethylphosphonyl)difluoromethylcadmium halides, CuCl-promoted coupling with aryl iodides, 2745
difluoroallylic alcohols, [2,3]-rearrangements of with C-P and C-S bond formation, formation of sulfoxides and phosphine oxides, 6403
5,6-difluoroarachidonic acid, potential inhibitor of 5-lipoxygenase, synth, 4941
difluoroethenezinc iodide, synth and Pd-catalyzed coupling with aryl iodides, synth of (*Z*)-α,β-difluorostyrenes, 7237
(*E*)- and (*Z*)-1,2-difluoroethenyl stannanes, stereospecific synths, 1921
α,α-difluoromethylene phosphonothioic acids, 2,2-disubstituted-1,1-difluorophosphonates and phosphonothioates, synth, 2229, 2233
α,α-difluoromethylenephosphonates and α,α-difluoromethylenephosphonothioates, efficient interconversion of, use in conversion of aldehydes to difluoromethyl ketones, 4707, 4711
1,1-difluoroolefins, synth from carboxylic acids *via* α,α-difluorothioethers, 3223
2,2-difluorovinyl zirconocene, synth and use in cross-couplings, 8799
difluorovinylcopper reagent by transmetalation of an α-lithio-β,β-difluoroenol carbamate with CuX_3Li_2, subsequent reaction with activated haloalkanes and acid chlorides, 5975
2,3-dihydro-1,4-diazepines and 1*H*-1,5-benzodiazepines containing CF_3 groups, synth, 2845
fluorinated dienophiles, synth and reactivity of, 8233, 8237
α-fluorinated α,α-difunctionalized sulfides and sulfones, synth, 2413
α-fluorinated ketones by direct fluorination using 1-fluoro-4-hydroxy-1,4-diazoniabicyclo[2.2.2]-octane bistetrafluoroborate, 3591
fluorinated ketones, energetics of hydrate and hemiketal formation for, 9165
α-fluoro β-keto esters, synth by acylation of diethyl(ethoxycarbonyl)fluoromethylphosphonate using magnesium chloride-triethylamine, 653
cis-2-fluoro-cyclopropane-1-carboxylic acid, synth from t-butyl acrylate and chloromethyl phenyl sulfoxide, 8507
(η^6-fluoroarene)tricarbonylchromiumcomplexes, nucleophilic aromatic substitution of, synth of arylpiperazines, 8487
fluorohydrins by reduction of β-fluoro-allylic alcohols, 2007
fluoroolefin synth from 2-arylimino-3,3,3-trifluoropropanoates and organometallic reagents, 2045
7-*cis*-8-fluororetinal, x-ray crystal structure, 4103
2-fluorosilylacetophenones by treatment of 2-silyl benzamides with LDA driven by CIPE-facilitated α-silyl carbanion formation and rearrangement, 2915
19-fluorovitamin D, synth by fluorination of vitamin D-sulfur dioxide adducts followed by

desulfonylation and isomerisation, 6753
fluoxetine, synth by enzymatic resolution of homoallyl alcohols, 9253
Fmoc amino acid fluorides for the coupling of extremely hindered amino acids using a strategy which involves treatment with bis(trimethylsilyl)actamide prior to acylation, 5483
$HOF.CH_3CN$ for direct epoxidation of unprotected olefinic carboxylic acids, 531
4-hydroxycoumarins fluorinated in the benzene ring, synth, 1551
(2S,3S) and (2S,3R) isomers of 3-fluoro-D-aspartic acid, synth from D-tartaric acid esters, 5103
kinetics of olefinic fluorine-substituted hex-5-enyl radical cyclizations, 5321
lithiation of *o*-, *m*- and *p*-chloro- and bromobenzotrifluorides, dependence of metalation site on reagent, 2767
lithium difluoromethylenephosphonate in the Wadsworth-Emmons reaction, 5881
lithium fluorenide, reaction with [60]fullerene, synth of a 1,4-adduct of [60]fullerene, 7061
monofluorinated vinylic compds from trifluoroethanol, 5183
N,N-dimethylamino α,α-difluoroketones, substitution reaction with tetramethylammonium salts of imidazole, synth of 5-imidazol-1-yl α,α-difluoroketones, 5119
nucleoside phosphorofluoridate, phosphorofluorido-thioate and -dithioate monoesters, synth, 5739
oxidative desulfurization-fluorination of trimethyl trithioorthoesters, formation of β-bromo-α,α-difluoroalkyl methyl thioethers, partially fluorinated olefin synth, 7983
pentafluorobenzene, alkylation of by propane in the presence of aprotic organic superacids CBr_4nAlBr_3 (n=1 or 2), 3363
ortho- and *para*-perfluoroalkylanilines, base-mediated reactions of, synth of quinolines and methanes, 4655
perfluoroalkylated triphenylethylenes, synth by reaction of perfluoroalkylated dithioketals with phenyllithium, oxidation of resulting vinyl sulfides and further reaction with phenyllithium, 5905, corrig. 7665
phenyl substituted fluoro-olefins by reaction of the anion, derived from diethyl α-fluorobenzyl phosphonate and lithium diisopropylamide, with aldehydes and ketones, 629
photosensitized defluorination of saturated perfluorocarbons, 2373
reduction of α,α,α-trifluoro-α'-sulfenyl ketones by various microorganisms, 3903
regioselective substitution of fluorine in fluorobenzenes, synth of aryl alkyl ethers, 6439
substituted α- and β-fluoro styrenes and *p*-fluorostyrene, rate constants for Diels-Alder reactions with diphenylisobenzofuran, 7251
tetrafluorofluorescein as fluorescent marker for protein SH groups, 7905
1,3,5-tri-*O*-benzoyl-2-deoxy-2-fluoro-α-D-arabinofuranose by fluorination of 1,3,5-tri-*O*-benzoyl-2-imidazolesulfonyl-α-Δ-ribofuranose, 17
trifluoroacetylation of anisole and other aryl ethers using TFAA and $CoCl_2$, 4511
trifluorohemifullerene from gas phase argon ion fragmentation of hexafluorotribenzotriphenylene, 7855
trifluoromethyl azomethine ylids, synth by heating of *N,N*-dimethyl-bis(methylthio)-*ortho*-trifluoroactamide or by deprotonation of trifluoromethyl thioamidium salts, 5515
α-trifluoromethyl substituted α-amino acids, synth *via* Stevens rearrangement of ammonium ylids formed on reaction of methyl 3,3,3-trifluoro-2-diazopropionate with amines and amides, 615
α-trifluoromethyl-*allo*-threonine derivs by Pummerer reactions of *N*-Cbz α-amino-α-trifluoromethyl-β-*p*-tolylsulfinylmethylbutanoates resulting in displacement of sulfinyl by hydroxy group, 6005
α-trifluoromethylated alcohols, functional group transformation of, 8187
trifluoropyruvamides, synth and Friedel-Crafts reaction of the hydrate forms with aromatic compds, synth of fluorinated glycolic acid derivs, 375

Formylation
– of adamantane by CO in presence of $CBr_4/AlBr_3$, 5775
stannyl– of vinylcyclopropanes accompanied by radical ring-opening, 6729

Fragmentation reactions
Beckmann-type oxime fragmentation in synth of milbemycin SB-201561, 4811
2,4-dihydroxytetrahydropyran portion of bafilomycins, – under Mitsunobu conditions, 9001
free radical expansion of cyclobutanones with sequential Grob – for synth of medium and large cyclic ketones, 957
gas phase argon ion fragmentation of hexafluorotribenzotriphenylene, generation of tri-

fluorohemifullerene, 7855
Grob − in one-pot transformation of phenoxy- and acetoxy- 6-iodo-6-deoxyglycosides into methylcyclopentanols using SmI_2, 5817
intramolecular [2+2] photocycloaddition-fragmentation approach to synth of asteriscanolide, 2177
oxidative − of 1-alkenyl sulfoxides using SO_2Cl_2, generation of 1-alkenylsulfinyl chlorides, 2345
of peroxyhemiacetals, stereoselective synth of 1,2-dioxolanes, 6409
photo-fragmentation of 3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane through a C-O bond cleaved 1,6-diradical intermediate, 8181
radical Grob-type − of fused cyclobutyl ketones, two-carbon ring expansion of cyclic enones to ring ketones, 6519
retro-ene type − of allylic dithiolcarbonates, formation of allyl alkyl sulfides, 2445
of 4-substituted pentacyclo[4.3.0.0^{2,4}.0^{3,8}.0^{5,7}]-nonan-9-ones to furnish functionalised tricyclo[3.2.1.0^{2,7}]octene derivs, 2655

Friedel-Crafts reactions
− benzylation of toluene by benzyl chloride and benzyl alcohol on sulfated zirconia, role of benzyl ether, 5405
of chlorobenzotrifluorides with aromatic compds to afford 1,1-dichlorodiphenylmethanes, 4063
of hydrate forms of trifluoropyruvamides with electron rich aromatic compds, synth of fluorinated glycolic acid derivs, 375
intramolecular − with dienyl acyl chloride $Fe(CO)_3$ complexes, formation of alkenylidene cyclopentanones and vinyl cyclopentenone $Fe(CO)_3$ complexes, 8763
palladium-catalysed cascade cycloaddition/formal Friedel-Crafts vinylation/alkylation reactions using alkyne substrates, 3399
reversible − of 3-alkyl-1-phenylsulfonylpyrroles, synth of 2,3- and 2,5-disubstituted pyrroles, 1523

Frogs
Epipedobates tricolor, chiral synth of epibatidine, 7485
Epipedobates tricolor Ecuadorian poison frog, synth of epibatidine, an antinociceptive alkaloid originally isolated from, 1463
indolizidine alkaloids 167B and 209D, pharmacologically active compds from skin secretions of neotropical frogs, synth by radical cyclisation of β-aminoacrylates, 1445

Fullerenes
[60]fullerene, reaction with lithium fluorenide, synth of a 1,4-adduct of [60]fullerene, 7061
benzoquinone and 1,4-dimethoxybenzene fused to C_{60} by two CH_2 bridges, anion radicals and dianion diradical, ESR, electrochemistry, crystal structure, 7987
buckminsterfullerene (C_{60}) ball-and-chain molecules containing the porphyrin chromophore, synth, 4797
C_{60} reaction with aldehydes in the presence of aqueous ammonia, synth of 2,5-dialkyl-substituted pyrrolidine derivs or $C_{60}(H)(CH_2Ph)$, 4031
C_{60}^- and C_{60}^{2-} by reduction of C_{60} with zinc powder in aqueous caustic/THF, 7409
capture of C_{60} by calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units in organic solution, 73
charge transfer complexes of [60]fullerene-tetrathiafulvalene systems with tetrafluorotetracyano-*p*-quinodimethane, electrochemical characterisation, 5979
cycloaddition of [60]− to cyanogen dioxide, 2:1 and 3:2 adducts detected by MALDI-TOF MS, 4137
C_{60}, cycloaddition to azomethine ylids from aldehydes and aminoacids, 775
dialkyl di[60]fullerenylacetylene and butadiyne, dumbell-shaped difullerenes, synth, cyclic voltammetry, 6153
dibenzylation of C_{60} using Collman reagent, 2049
dimeric dumbbell −, *N*-methylpyrrolidine-fused, connected *via* *N,N'*-di-*p*-phenylenepiperazine group, voltammetry, ^{1}H NMR, 9391
endohedral metallofullerenes, solid phase extraction with C_{18}-bonded silica for enrichment of, 9249
fullerene (C_{60})-Ag^+ interactions inducing a solution colour change, 7091
methanofullerenes $C_{60}(CHCN)$ and $C_{60}(CBr_2)$, synth and characterisation, 1085
6,5 open and 6,6 closed cycloalkylidenefullerenes, synth by reaction of C_{60} with tosylhydrazone lithium salts, 4651
trifluorohemifullerene from gas phase argon ion fragmentation of hexafluorotribenzotriphenylene, 7855
urethano-, amido- and sulfonamido-[60]fullerenes by nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, 4683
δ-valerolactam deriv of C_{60} by hetero Diels-Alder reactions with 1,3-bis(t-butyldimethylsilyloxy)-2-aza-1,3-butadiene, 9211

Fulvenes and fulvalenes
ansa bridged 1-azafulvene roseophilin, synth of bicyclic core of from δ-(sulfonylamino)-α-epoxy ketones, 2545
bis(benzo)- and bis(naphtho)-fused derivs of bis-(ethylenedithio)tetrathiafulvalene, synth employing [4+2] cycloaddition of oligo(1,3-dithiole-2,4,5-trithione) with olefins, 8085
2-(1,3-benzodithiol-2-ylidene)-1,3-benzoxathiole (dibenzo-oxatrithiafulvalene), synth and characterisation, 2931
bis(trisubstituted tetrathiafulvalenyl) disulfides, synth by oxidative coupling of TTF thiolates, 5115
fulveneketene acetal, [6+3] cycloaddition with 2-oxyallyl cation, synth of indane ring systems, 659

Fungi
Agrocybe cylindracea, isolation and structure of agrocybenine, fungal pyrrolo[3,2-*b*]pyridinone alkaloid, 4549
aspergillis, secondary metabolite produced by –, deoxyaspergillic acid, synth from dipeptidyl aldehyde, 2249
Aspergillus alliaceus, synth of isokotanin A-C, bicoumarins originally isolated from sclerotia of, 3015
Beauveria sulfurescens and *Cunninghamella blakesleeana*, enantioselective hydrolysis of 2-hydroxymethyl-1-phenylcyclopropane-1-carboxylic acid lactone by whole cell cultures, 4519
Beauveria sulfurescens, use for enantioselective hydrolysis of epoxyindene and dihydronaphthalene epoxides, synth of enantiopure epoxides and vicinal diols, 3319
Botrysdiplodia theobromae, synth of (*R*)-(+)-lasiodiplodin and de-*O*-methyl lasiodiplodin, plant growth inhibitors originally isolated from, 7005
Cercospora beticola, structure of beticolin 0 toxin, 3121
Colletotrichum fragariae, colletofragarones A1 and A2, conidial germination self-inhibitors, structure, 5731, corrig. 8823
Cunninghamella echinulata for synth of (+)-multifidene and (+)-viridiene by microbiological Baeyer-Villiger oxidation of bicycloheptenone, 1011
Eupenicillium javanicum var. *meloforme* PF1181, isolation and structure elucidation of neuchromenin from –, 6363
Fusarium pallidoroseum, isolation of apicidin from, antimalarial and antiparasitic activity of, 8077
Geotrichum candidum, acetone powder, chiral reduction of ketones using a 2-alkanol as reductant, 1629
Penicillium sp. separated from marine alga *Enteromorpha intestinalis*, structure elucidation of penostatins isolated from, 655
Phellinus sp. (mushroom), synth of (±)- and (1*R*, 6*S*)-cyclophellitol, originally isolated from, from 7-oxabicyclo[2.2.1]hept-5-ene-2-*endo*-carboxylic acid, 3043
Pseudomonas cepacia D-202, structure of cepaciamide A isolated from, 1039
Sch 65676, fungal metabolite with inhibitory activity against the cytomegalovirus protease, structures, 3943
squalestatins, fungal metabolites with inhibitory activity against squalene synthase, synth of the C-4 carboxamide derivs, the C-4 amides and C-4 hydroxymethyl derivs, 8925
Streptomyces aeriouvifer, mevalonate and non-mevalonate pathways to menaquinone and naphterpin, 7979
Streptomyces griseochromogenes, synth of degradation product of tautomycetin isolated from, determination of stereochemistry, 491
Streptomyces griseus, isolation of diphenazithionin from, structure and inhibitory activity of lipid peroxidation, 9227
Streptomyces miharaensis, synth of the northern part of miharamycin B, originally isolated from –, from methyl 2,3,4-tri-*O*-benzyl-α-D-glucohexodialdo-1,5-pyranoside, 4003
Streptomyces roseosporus, total synth of (+)-conagenin originally isolated from–, 4047, corrig. 4287
Streptoverticillium ehimense, synth of carazostatin alkaloid, originally isolated from, by allene-mediated electrocyclic reaction, 2593
Trichoderma polysporum, structures of polysporins A-D, peptaibols originally isolated from, 3039
Tricholoma acerbum, isol and structure of tricholomenyns C, D, E, dimeric dienyne geranyl cyclohexenones, 6223
Trichothecium roseum, structure and antitumour activity of trichothecinols A-C isolated from–, 9219

Fungicides
strobilurin A fungicide, synth *via* palladium(0)-catalysed cross-coupling reaction of arylboronic acids with vinyl and aryl bromides, 8213

Furanones

2,2-dichloro-4-(2-phenylethyl)-4-trimethylsilylfuran-3(2*H*)-one, use as coupling reagent in amide bond formation in aqueous media, 7541

dihydrofuran-2(5*H*)-ones, formation by ozonolysis of 2-tributylstannyl tetrahydrofurans, 9115

2(5*H*)-furanone H-bonded to a ureido-chromone-2-carboxamide, catalysis of pyrrolidine addition, 6947

5-hydroxy-2(5*H*)-furanones, dynamic kinetic resolution of catalysed by lipase PS, 4759

3-oxotetrahydrofuran-2-carboxylic esters, from aldehydes or ketones and diazoacetoacetic ester silyl enolate, cyclizing diazo-alcohol using Rh octanoate, 8277

RK-682, tyrosine phosphatase inhibitor, tetronic acid deriv, synth, 8775

3-substituted 1(3*H*)-isobenzofuranones (phthalides), asymmetric synth by reduction of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, 2205

4-substituted furan-2(5*H*)-ones, synth *via* Heck reaction of arenediazonium salts with 2,5-dihydrofuran, 8625

Furans

[4+3] intramolecular cycloaddition of − to 2-methoxy-3-phenylthioallylium ions, 783

3-acyl −, synth from methoxyethoxymethyl 2-benzenesulfonyl-2-tributylstannylcyclopropyl ether, 4585

3-alkylidenetetrahydrofurans, synth by titanocene and zirconocene promoted cyclizations of allyl propargyl ethers, 9059

1,1-bis(3,5-dimethylfur-2-yl)ethane, Diels-Alder reaction with diethyl 4-oxohepta-2,5-dienedioate, approach to polypropionate fragments, 4149

conversion of − ring into 4-oxobut-2-enoic acid moiety, use of NBS in acetone, then $NaClO_2$, 6125

[2+2]-cycloaddition of dihydrofuran and dihydropyran to quinones *versus* Lewis acid promoted spiroannulation, 5221

4,5-dihydrofuran-3-carbonitriles, synth from alkenes and acylacetonitriles using $Mn(OAc)_3$, 4949

4,5-dihydrofuran-3-carboxylates, formation from 6*H*-pyran-3-carboxylates on reaction with arsonium ylids, 9349

dihydrofuranyl Fischer carbene complexes carrying thioether groups, oxidation to sulfoxides by methyltrioxorhenium/H_2O_2, 9385

(*E*)-5,5′-dimesitylbifuranylidenedione, reaction with Horner-Wittig reagent, 9255

2,5-disubstituted − from γ-hydroxy-αβ-unsaturated ketones, 6065

2,5-disubstituted di- and tetrahydrofurans, synth from a lactol, 63

2,5-disubstituted tetrahydrofurans, synth by *p*-toluenesulfonic acid catalysed cyclisation of (*Z*)-1-substituted-5-silyl-4-penten-1-ols, 487

2-fluoromethyl- and 2-hydroxymethyl-4-alkyl furans, synth from α-alkyl acroleins and 1-bromo-1-trimethylsilylethylene *via* allene oxides, 7437

5*H*-furan-2-one, conjugate addition-alkylation of followed by cyclisation and epimerisation, synth of podophyllotoxin, 2663

furan/acetone cyclic oligomers, X-ray of hexamer, synth of nonamer, isolation and cyclization of linear oligomers, 4593

bis-furanosides by oxidative cyclisation of 3-hydroxy 4-vinyl furanoside derivs, 6007

2-(2-furyl)phenyltropylium ion, generation and intramolecular rearrangement, formation of β-(10-benz[*a*]azulenyl)-αβ-unsaturated ketones, 4965

5-hydroxy-3-(3,6-dihydropyran-2-yl) furans and furan-2(5*H*)-ones, synth, 8007

3-hydroxymethyltetrahydrofurans, synth by 5-*exo*-cyclization of iodo-alkenes with oxygenation, 3117

methyl 5-aminofuroate, [4+2]-cycloaddition of followed by dehydration of the cycloadducts, synth of polysubstituted anilines, 2903

3-methylene-2,3-dihydrofuran, ene reactions with aldehydes promoted by Lewis acids, 7893

5-methylene-2,5-dihydrofuran-2-spiro[3,4,5,6-tetrahydro-2-pyran], spiroacetal enol ether, synth by intramolecular conjugate addition of hemiacetal alkoxides to alkynoates, 5707

2-methylene-3,4-epoxy-tetrahydrofuran, electrophilic and nucleophilic additions to the double bond, stereochemistry, dihydro− and − syntheses, 2777, 2781

3-methylenetetrahydro−, synth by radical cyclizations, 6583

naphtho[1,2-c;5,6-c]difuran, analogue of isobenzofuran, synth from 2,6-dimethylnaphthalene, 8845

nonracemic 3- and 4-amino furans bound to polystyrene, Diels-Alder reactions of, comparison to their solution state analogues, 2133

α-oxo-β-trimethylstannylmethyltetrahydrofurans,

synth by radical cyclization and conversion into α,β-methano-heterocycles, 8967
(+)- and (-)-phaseolinic acid, 4-carboxy-3-methyl-5-pentyldihydrofuran-2-one, enantioselective synth, 8297
phoeniceroside (2,2-bis-(5-methyl-4-(*O*-β-D-glucopyranosyl)-3(2*H*)-furanone)-propane)isolated from *Juniperus phoenicea*, structure, 2955
photocycloaddition of 1-naphthalenecarbonitrile to –, *endo* and *exo* [4+4] cycloadducts, and [2+2] product from Cope rearrangement of the latter, 9329
2-silyl tetrahydrofuran-3-carboxylic acid, synth and chemistry, 9119
styryl tetrahydrofurans, synth by radical addition to styryl sulfimides, 909
substituted furans by base promoted reactions of 4-pentynones, 3387
2-substituted furans, conversion into γ-oxo-α,β-unsaturated carboxylic acids, intermediates to (+)-patulolide A and (–)-pyrenophorin, 4385
2-substituted furotropones, synth by reaction of alkynyl(phenyl)iodonium tetrafluoroborates with tropolones, 5539
substituted tetrahydrofurans by cyclisation of 4-phenylsulfanyl-1,3-diols with secondary and tertiary alcohols as nucleophiles, 4077
tetrahydro–, chiral synth of 2,2,4-trisubstituted derivs *via* titanium imide enolates, synth of antifungal agents, 5657, corrig. 6821
tetrahydro–, stereoselective ring expansion to tetrahydropyrans, 213
tetrahydrofuran-tungsten pentacarbonyl, reaction with 1-alkyn-5-ols, cyclisation to the corresponding tungsten dihydropyranylidene carbenes and subsequent conversion into α-stannyl dihydropyrans, 4675
tetrahydrofurans, synth from 4-*RS*-1,3-diols involving alkylsulfanyl (SMe, SEt and SCH_2Ph) and sulfanyl (SH) migration, 4823
tetrahydrofurans, synth using bis-pyranoside alkenes as templates by prep of a bis-THF diol core structure, 3619
2-tributylstannyl tetrahydrofurans, ozonolysis to form γ-butyrolactones, 9115
5-trimethylsilyl-2-furfuryl propargyl ethers, Diels-Alder reactions of followed by trimethylsilyl group 1,2-rearrangement and Brook rearrangement, 7395
2-(trimethylsilyloxy)furan, coupling with 1-t-butoxycarbonyl-2-methoxypyrrolidines, 7963
2,3,5-trisubstituted furans, synth by reaction of 3-acetyl-5-hexyn-2-one with aryl iodides under carbon monoxide, 6811

Gallium and compds
trialkylgallium compds, unexpected reaction with 2-aryl-1-nitro-1-alkenes *via* NO_2/alkyl substitution, 3347
Gassman reactions
modified Gassman oxindole synth from anilines, 4631
Geochemistry
AB-diaromatic 14-methyl steroids in Pakistani oil seeps, occurrence, synthesis, biochemical origin, 2837
Germanium and compds
dialkynes with orthogonal protection by $SiMe_3$ and $GeMe_3$ groups, 7959
zirconocyclization of diallylgermanes, synth of chiral germacyclopentanes, 3109
Gibberellins
(±)-antheridic acid, synth, 7553
C-arylation of a – on attempted radical deoxygenation, 4255
GA_{32} from immature seeds of *Prunus persica* and GA_{99} from *Spinacia oleracea*, synth from gibberellic acid, 719, 723
6β-hydroxy-gibberellin-7α-carboxaldehyde, rearrangement results in ring-expansion of the B-ring to afford functionalised 20-norkaurenoids, 8937
Glycals
3-*O*-acetyl glucal and analogues, dimerization with AcClO*4*, formation of *C*-disaccharides, 9093
formation of – from Cr(II) complexes of glucose derivs, 1293
oxidative azidonation of – using $PhIO/TMSN_3$ reagent combination, synth of diaminopyrans, 303
palladium-catalysed [3+2]-cycloaddition reactions of glycals, 2303, 2307
substituted glycals, synth from glycosyl bromides using $(Cp_2TiCl)_2$, 4357
Glycerol
(1*S*,2*R*)-imidazoleglycerol, synth involving hydroxylation of an acyloxazolidinone enolate, alkylation of a thioester and reduction of the resulting ketone, 9259
C-2 and C-perdeuteriated –, synth of glycerol-deuteriated ether phospholipids, 5705
triacylglycerol positional isomers, structural analysis using atmospheric pressure chemical

ionisation mass spectrometry, 8593

Glycolipids

2,6-anhydro-3-deoxy-5-*O*-phosphono-3-tetradecanamido-4-*O*-[3-(tetradecanoyloxy)tetradecanoyl]-D-*glycero*-D-*ido*-heptonic acid, endotoxin antagonist, synth, and of dimer, 7271

C-fucopeptides, selectin antagonists, synth of lipid-attached molecules to enhance activity, 9033

deacetyl caloporoside, β-D-mannoside, inhibitor of $GABA_A$ receptor ion channel, synth, 2453

tetrasaccharide of extended blood group B determinant, glycosylation strategy in synth, 4551

Glycopeptides/glycoproteins

asparagine-linked glycoproteins, synth of core trisaccharide, 8795

C-fucopeptides, selectin antagonists, synth of lipid-attached molecules to enhance activity, 9033

C-mannose derivatives, sialyl Lewis X mimics, synth, 9037

core-fucosylated biantennary octasaccharide, synth as precursor to *N*-glycan –, 6527

α-*O*-fucosylated Fmoc serine and threonine, building blocks for glycopeptide synth, 7645

glycolate ester peptides, synth from Fmoc-protected amino acids, use for the assembly of *de novo* designed multimeric proteins using subtiligase, 6653

glycopeptide analogue of the immunodominant T cell epitope on type II collagen, solid phase synth, use of acid labile protective groups for carbohydrate moieties in solid phase synth of glycopeptides, 3011

glycopeptide antibiotics, synthetic studies towards, synth of 16-membered cyclic tripeptide (DOEG ring) system of teicoplanin, 3023

glycopeptides containing *O*-α-fucosyl-(1*R*,2*R*)-2-aminocyclohexanol, design and synth as sialyl Lewis X mimetics, 5427

high-mannose *N*-glycopeptide analog with *C*-glycosidic link, chemoenzymatic synth, 1975

HIV gp120, envelope glycoprotein that binds to the T-cell surface receptor CD4, synth of (*S,S*)-3-prolylazetidin-2-one as component in prep of an HIV gp120 constrained immunogen, 965

orienticin C, glycopeptide antibiotic, synth of the M(2-4) macrocyclic subunit from a tetrapeptide presursor by intramolecular nucleophilic aromatic substitution, 3251

sulfated bivalent glycopeptides, designed to probe selectin recognition, synth by HBTU-promoted coupling of a sulfated lactoside deriv to aspartic acid residues, 2907

Glycosides

2-amino-2-deoxy-α-D-C-glycopyranosides, synth by radical cyclisation of phenyl 2-*N*-allylamino-3,4,6-tri-*O*-benzyl-2-deoxy-α-D-1-seleno *galacto* and *gluco* pyranosides, 9193

bis-annulated pyranosides, synth by palladium(0)-catalysed cascade cyclisation on carbohydrate templates, 59

aqueous media containing glycosidic surfactants or amphiphilic carbohydrates for reduction of carbonyl compds, 53

bis-TBDPS protected aryl *C*-olivosides, unusual stereochemistry of glycosides when the C3 and C4 hydroxyls are protected by an extremely bulky group, 663

calystegine B_1 (tetrahydroxynortropane) glucoside, isol from *Nicandra physalodes*, structure, 3207

castavinols, glucoside polyphenol series from Bordeaux red wines, structures, 7739

cholestane glycosides from *Ornithogalum saundersiae*, cytostatic activity, 1245

deacetyl caloporoside, β-D-mannoside, inhibitor of $GABA_A$ receptor ion channel, synth, 2453

α-*O*- and *S*-2-deoxyglycosides, synth by Michael addition to hex-1-en-3-uloses followed by borohydride reduction, 3453

6-deoxyhex-5-enopyranosides, Ferrier rearrangement into cyclohexanones mediated by palladium chloride, 649

erinacines E-G, diterpene xylosides which stimulate nerve growth factor synth, from the mycelia of *Hericium erinaceum*, structures, 7399

α-*O*-fucosylated Fmoc serine and threonine, building blocks for glycopeptide synth, 7645

bis-furanosides by oxidative cyclisation of 3-hydroxy 4-vinyl furanoside derivs, 6007

C-glycosides, experimental evidence of the existence of a gauche-gauche conformation around the glycoside linkage for a lactose analogue, 1467

glycosyl chlorides, synth under basic conditions using BuLi/diphenyl chlorophosphonate, 4903

methyl 2-thioglycoside of *N*-glycolylneuraminic acid, synth from *N*-acetylneuraminic acid, 2613

methyl altroside tetraacetate, starting compound for zooxanthellatoxin part synth, 3153

methyl 2,3,4-tri-*O*-benzyl-α-D-gluco-hexodialdo-1,5-pyranoside, starting material for synth of northern part of miharamycin B, 4003

modification of thimidine, extension at 5'-sugar position, 2739
neohancosides A and B, monoterpene diglycosides from *Cynanchum hancockianum*, synth using fluoride as a glycosyl donor, 4015
oligosaccharides, debenzylation of using ferric chloride, 5477
phenyl glycopyranoside and β anomer of phenyl glucoside, recognition in water using Stoddart's cyclobis(paraquat-*p*-phenylene) receptor, 263, 287
(*Z*)-3-phenyl-2-β-D-glucopyranosyloxypropenoic acid, glucoside of phenylpyruvic acid, occurrence in *Aspalathus linearis*, biosynthetic significance, 5763
phoeniceroside (2,2-bis-(5-methyl-4-(*O*-β-D-glucopyranosyl)-3(2*H*)-furanone)-propane) isolated from *Juniperus phoenicea*, structure, 2955
bis-pyranoside alkenes as templates for the assembly of tetrahydrofurans by prep of a bis-THF diol core structure, 3619
pyrazine *C*-ribosides, synth by direct metalation, 5325
ribosylation of 6,7-dichloroimidazo[4,5-*b*]quinolin-2-one, synth of 6,7-dichloro-1- and 3- (2,3,5-tri-*O*-benzoyl-β-D-ribofuranosyl)imidazo[4,5-*b*] quinolin-2-one, 3263
sulfinylglycosides, activation by the TfOH/TEP system in glycosylation to afford disaccharides, 1477
synth of glucosinolates bearing external thio function from corresponding hydroximoyl chlorides and 1-thioglucose deriv, 5699
thioglycosides of D-fructofuranose, synth from D-arabinose, glycosylation of to give α-fructofuranosides, 7413
transformation of phenoxy- and acetoxy- 6-iodo-6-deoxyglycosides into methylcyclopentanols using SmI_2, 5817
2-(trimethylsilyl)ethyl2-acetamido-2-deoxy-3,4,6-tri-*O*-acetyl-β-D-glucopyranoside, prep from 2-acetamido-2-deoxy-1,3,4,6-tetra-*O*-acetyl-β-D-glucopyranose, 609
unprotected or fully benzylated methyl 1-thio-β-D-galactopyranoside, alcoholysis of promoted by iodine, 5175
water-soluble glycopolymers containing GM_3 saccharide, 3421

Glycosylation
activation of glycosyl halides by iodine or I_2/DDQ, 8807
activation of glycosyl phosphates by *in situ* conversion into glycosyl iodides, 3837
of 2-aminopurine in synth of the northern part of miharamycin B from methyl 2,3,4-tri-*O*-benzyl-α-D-gluco-hexodialdo-1,5-pyranoside, 4003
with glycosyl trichloroacetimidates promoted by dibutylboron triflate, 6985
orthogonal – strategy in synth of tetrasaccharide of extended blood group B determinant, 4551
pteridine analogues of adenine nucleosides, synth, 8355
ribosylation of 6,7-dichloroimidazo[4,5-*b*]quinolin-2-one, synth of 6,7-dichloro-1- and 3- (2,3,5-tri-*O*-benzoyl-β-D-ribofuranosyl)imidazo[4,5-*b*] quinolin-2-one, 3263
β-selective – with α-mannosyl fluorides using tin(II) triflate and lanthanum perchlorate, 7797
of several template linked monosaccharides leading to macrocyclic disaccharides, effect of the anchoring sites of the spacer and the reaction temperature on regio- and stereo-selectivity, 1105
sulfoxide glycosylation reactions, activation of sulfinylglycosides by the TfOH/TEP system in glycosylation to afford disaccharides, 1477
of thioglycosides of D-fructofuranose to give α-fructofuranosides, 7413
two-step – involving linking two sugars using carbonate as connector and, the removal of carbon dioxide to form a glycosidic bond, 2267
2',3'-unsaturated pyrimidine nucleosides by direct – of bistrimethylsilyluracil by 1-phenylthio-2,3-dideoxy-2,3-didehydroribose, 6133

Gold and compds
AuCl(NC-cyclohexyl) catalyst for *erythro*-selective cycloaddition of $MeOCOCH_2NC$ to *N*-tosylaldimines, formation of imidazolines, 4969

Grignard reactions/reagents
acyl tributyl phosphonium salts, reaction with – reagents, synth of ketones, 5381
addition of – reagents to masked imines and iminium ions - 4,10-dioxatricyclo[5.2.1.$0^{2,6}$]-dec-8-en-3-amines, diastereoselection, 8729
addition of Grignard reagents to ω-bromonitriles and γ,δ-unsaturated nitriles, synth of functionalised cyclic imines, 6227
– reagent addition to enaminones derived from 2-methylcyclohexane-1,3-dione, 3823
addition of α,β-unsaturated dioxolanones derived from mandelic acid, synth of adducts which could be converted to allylic alcohols and α-hydroxy aldehydes for use in eicosanoid synth, 1421, 1425
aryl Grignard reagents, reaction with tricarbo-

nyl(2,4,6-trimethylphenyl-2-methoxybenzoate)-chromium complexes, synth of axially chiral biaryls, 6359
asymmetric addition of − reagents to chiral 1-acylpyridinium salts, chiral auxiliary study, 3807
copper 'catalysed' Grignard reagents, reaction with (*S*)-*N*-t-butoxycarbonylaziridine-2-carboxylate derivs, synth of protected α-amino acids, 3761
copper(I)-mediated conjugate addition to 2-silyloxycyclopentenecarboxylates, synth of 5-substituted-2-hydroxycyclopentanecarboxylates after desilylation, 6323
Grignard reaction of α-phenyl-β-nitrostyrene and β-nitrostyrene, synth of hydroximoyl halides or nitrile oxides, 6339
Grignard reaction of dimethyl (*S*)-*p*-tolyl-sulfinylmethylphosphonate, synth of enantiomerically pure sulfoxides, 6017
Grignard reagent in the presence of $Ti(O\text{-}i\text{-}Pr)_4$ for the selective cleavage of allyl ethers, 3663
Grignard reagents such as phenyl-, vinyl-, allyl-, benzyl- and alkyl-magnesium halides, copper catalysed reaction with β-perfluoroalkyl-substituted alkyl halides, generation of cross-coupled products, 5557
reaction with symmetrical and unsymmetrical endo peroxides, synth of hydroxy ethers, 6635

Guanidines
amidinoureas, synth from *N*-aminocarbonylisothiourea derivatives, 1945
N-arenesulfonyl *N'*-cyano *N''*-aryl −, synth, 7253
batzelladines, marine alkaloids with 5,6,8b-triazaacenaphthene (guanidine) core, condensation of guanidine with octadeca-3,7-diene-2,9-dione, 6943
bicyclic guanidines as catalysts for Michael reaction with α,β-unsaturated nitriles and esters catalysed by bicyclic guanidines, kinetic *versus* thermodynamic control, 4423
guanidinium based tweezer receptor with two tripetide chains, synth on solid support, 5409
guanidino acids, synth from amino acids using protected *S*-methylisothiourea derivs, 2483
guanylation of amines by *S*-methyl-*N*-arenesulfonyl isothioureas, 8711
bis-Boc protected *N*-methylguanidines, synth by *N*-methylguanylation of anilines, 6815
peri-fused 6.6.5-tricyclic −, synth in approach to ptilomycalin A skeleton, 905
phenethylguanidoxime, photo-sensitised oxygenation of yielding a urea deriv and nitric oxide, chemical model for biological oxidation of N^{ω}-hydroxy-L-arginine and L-citrulline, 4393
stellettadine A, acylated bisguanidinium alkaloid which induces larval metamorphosis in ascidians, isolation from *Stelletta* sp., structure, 5555
substituted guanidines, synth from their thiourea analogues using Lac sulfur on alumina-triethanolamine, 5161, corrig. 7665
1,1,3,3-tetramethylguanidinium azide, use in azidolysis of epoxides, synth of β-azidoalcohols, 1675

Hafnium and compds
direct C-acylation of phenols by acids using catalytic $Hf(OTf)_4$, 4183
$Hf(OTf)_4$ catalyst for Fries rearrangement and for acylation of phenols and naphthols, 2053

Haller-Bauer reactions
see Bauer-Haller reactions

Halo esters
2-aryloxy acids from lactamide-derived esters of racemic α-halocarboxylic acids, 2683
β-chloroglutaric esters, synth *via* radical chlorination of the anhydrides, 7245
α-fluoro-α-phenylthio-β-hydroxyesters, reaction with DAST with SPh migration, formation of α,α-difluoro β-phenylthio esters, and subsequent synthetic reactions, 8759

Halogenation
bromination, protobromination/transbromination of 4'-bromohymenin, synth of Stevensine marine sponge alkaloid, 8121
bromination using a molybdenum-catalysed procedure based on mode of action of haloperoxidases, 8609
bromolactonization using $CuBr_2$ on alumina, 157
DAST fluoro-dehydroxylation of $Cr(CO)_3$ complexes of secondary benzylic alcohols, 5691
direct α-fluorination of ketones using 1-fluoro-4-hydroxy-1,4-diazoniabicyclo[2.2.2]octane bistetrafluoroborate, 3591
enol ether halo-alkoxylation, 2-methylene-3,6-bicyclo[3.1.0]hexanes, stereochemistry, 2777
αβ-enones and alkenes, chlorination and bromination using peroxysulfate and sodium halide, 2377
fluorination, α-alkoxy-α-fluoromethanephosphonates, synth by − using $(PhSO_2)_2NF$, 8975
fluorination, addition of allyltrimethylsilane or 1,8-bis(trimethylsilyl)-2,6-octadiene and trifluoroacetic anhydride, synth of trifluoromethyldiallylcarbinol or (d,l)-1-trifluoromethyl-2,5-divinylcyclopentanol, 5107

fluorination of benzylic phosphonates, synth of the corresponding benzylic mono(α,α-difluoromethylphosphonates) and benzylic bis(α,α-difluoromethylphosphonates), 8089
gem-difluorination of dithioacetals mediated by *p*-methoxyiodobenzene chlorofluoride, synth of hypervalent iodobenzene chlorofluorides, 4725
fluorination or hydroxylation of non activated C-H bonds in amides and ketones using CCl_4 or NBS in superacids, 2967
fluorination, *ipso*-fluorination of (*R,S*)-1,1'-bi-5,6,7,8-tetrahydro-2-naphthol, synth of atropisomeric fluorocyclohexadienones, 7735
fluorination of 1,3,5-tri-*O*-benzoyl-2-imidazolesulfonyl-α-D-ribofuranose, synth of 1,3,5-tri-*O*-benzoyl-2-deoxy-2-fluoro-α-D-arabinofuranose *via* a fluorosulfonate intermediate, 17
fluorination of vitamin D-sulfur dioxide adducts followed by desulfonylation and isomerisation, synth of 19-fluorovitamin D, 6753
fluorinative ring expansion of cycloalkylideneacetates to give β,β-difluorocycloalkanecarboxylic esters, 8511
haloacetoxylation of 1,4-dimethoxynaphthalenes using hypervalent iodine chemistry, 6443
intramolecular amino-bromination in 5-aminodibenzo[*a,e*]cycloheptene-5-carbonitrile, 8655
iodination of methoxybenzenes and naphthalenes with *N*-iodosuccinimide in acetonitrile, 4081
iodo-desilylation of vinylsilanes, conditions for effective use of *N*-iodosuccinimide, 8647

Halogens and compds

iodosilyletherisation of 4-methyl-3-pentenyldiphenylsilanol with bis(2,4,6-trimethylpyridine)-iodine(I) hexafluorophosphate, synth of 6,6-dimethyl-5-iodo-2,2-diphenyl-1-oxa-2-silacyclohexane, 6781
acid chlorides, zinc-mediated allylation of, synth of α,β-unsaturated ketones, 1109
activation of glycosyl halides by iodine or I_2/DDQ, 8807
alkenyl halides by reaction of alkenyl boronic acids with halosuccinimides, 567
alkyl and thienyl bromides, oxidative addition of Rieke manganese to, synth of organomanganese bromides, 2197
allyl bromides, reaction with aldehydes mediated by chromium(II) chloride, synth of *syn*-4-alkoxyalkan-1-ols, 5487
aryl halides, palladium-catalysed coupling with terminal alkynes under Jeffery's conditions, 5527
aryl iodides, vinylation of using homogeneous $Pt(COD)Cl_2/PPh_3$ as catalyst, 8917
aryl transfer from B to I(III), reaction of (diacetoxyiodo)arenes with tetraarylborates in AcOH, synth of diaryliodonium tetraarylborates, 8421
aryl zinc bromides, coupling to aryl bromides bound to a polystyrene resin, liberation of the biaryl carboxylic ester by transesterification, 5491
(aryl)(phenyl)iodonium triflates, synth by ligand exchange reactions between β-[[(trifluoromethylsulfonyl)oxy]vinyl](phenyl)-iodonium triflates and aryllithiums, 3721
benzotrichloride, electrochemical reduction in the presence of cobalt(II)(salen), synth of 1,1,2,2-tetrachloro-1,2-diphenylethane and 1,2-dichlorostilbene–diphenylacetylene, 8105
benzylic bromides, reaction with pyridine *N*-oxides under microwave irradiation, synth of aromatic aldehydes, 7725
benzylic mono(α,α-difluoromethylphosphonates) and benzylic bis(α,α-difluoromethylphosphonates), synth *via* electrophilic fluorination of the corresponding benzylic phosphonates, 8089
benzylic phosphonothioic dichlorides, nucleophilic substitution in, formation of a diamide without intervention of the amidic chloride, 8247
borane protected and free polyfunctional chlorodiorganophosphines, synth by using zinc organometallics, 2209
(*Z*)-1-bromo-1-alkenes, synth by palladium catalysed hydrogenolysis of 1,1-dibromo-1-alkenes by tributyltin hydride, 6759
chlorinated aromatics, heterogeneous photodechlorination of using photosensitisers covalently anchored to silica, 381
coupling of α-bromo- and -iodo-esters using SmI_2/HMPA, synth of succinic esters, 801
2-deoxy-2-fluoro-γ-aldonolactones, asymmetric synth of and conversion to 2-deoxy-2-fluoropentoses, 4345
1,1-dichlorodiphenylmethanes, synth by reaction of chlorobenzotrifluorides with aromatic compds, 4063
gem-difluorocyclopropanes substituted with an electron withdrawing group, synth by reaction of *gem*-dichlorocyclopropanes with tetra-n-butylammonium fluoride trihydrate, 4085
1,1-dihalocyclopropanes, hydrodehalogenation of by reaction with ethyl magnesium bromide and titanium isopropoxide, 8933
1,3-dihydro-3-methyl-3-phenyl-2,1λ^3-benzox-

iodoles, racemic and chiral, with various 1-substituents, synth, 6453
diiodosamarium as catalyst precursor for ene reactions of unsaturated carbonyl compds, 5195
glycosyl bromides, reaction with $(Cp_2TiCl)_2$, synth of substituted glycals, 4357
α-haloenyne sulfones, vinylic substitution with sodium alkoxides, synth of (*E*)-α-alkoxyenyne sulfones, 7381
halogen transfer radical addition of methyl 2-bromo-2-chlorocarboxylates to olefins, 2077
halogenated dimethylenecyclobutane and methylenecyclobutene derivs, thermal rearrangements of, synth of styrene derivs, 5099
β-halohydrins, synth from the corresponding epoxides by lithium halides supported on silica gel in dry media, 1845
halopyridines, Suzuki coupling with sterically bulky boronic acid, effect of base on acceleration of rate, 1043
higher α-chlorovinyl and α-bromovinyl amino acids, synth from *N*-trifluoroacetyl α-vinyl amino esters, 4309
highly oxygenated vinyl halides, Sonogashira coupling of, prep of anti-cancer agent harveynone and *epi*-harveynone, 7445
hypervalent iodobenzene chlorofluorides, electrosynth by anodic *gem*-difluorination of dithioacetals mediated by *p*-methoxyiodobenzene chlorofluoride, 4725
imino-iodonium zwitterions from 2-amino-1,4-naphthoquinone and ArI(III) compds, 913
iodanes (Koser's and Zefirov's reagents), palladium-catalysed cross-coupling of with organostannanes, synth of phenyl- or 4-iodophenyl-substituted products, 3723
iodine as an efficient promoter in the alcoholysis of unprotected or fully benzylated methyl 1-thio-β-D-galactopyranoside, 5175
iodoarenes and diaryliodonium salts, Pd-catalyzed coupling with terminal acetylenesin water, 897
iodotrichlorosilane as reducing agent for αβ-unsaturated ketones and nitriles, 2297
α-mannosyl fluorides for β-selective glycosylation using tin(II) triflate and lanthanum perchlorate, 7797
metallic samarium for reductive halogenation of aliphatic *vic*-dihalides, 9313
β-perfluoroalkyl-substituted alkyl halides, coupling reaction with Grignard reagents such as phenyl-, vinyl-, allyl-, benzyl- and alkylmagnesium halides, generation of cross-coupled products, 5557
periodic acid for deblocking of dithioacetals and oxathioacetals, 4331
sulfenyl chlorides, synth by reaction of sulfenate esters with acyl chlorides, trapping with alkenes, 679
see also Fluorine and compds, Perfluoroalkyl compds

Halohydrins
diastereoselective iodohydroxylation of γδ-unsaturated amides, proposed absence of involvement of iminium ion intermediate, 6843
fluorohydrins by reduction of β-fluoro-allylic alcohols, 2007, 2007
β-halohydrins, synth from the corresponding epoxides by lithium halides supported on silica gel in dry media, 1845
hydroxyiodination of acetoxy-cyclohexenes, prep of tetraacetyl conduritol D, 6579

Heck reactions
of arenediazonium salts with 2,5-dihydrofuran, synth of 4-substituted furan-2(5*H*)-ones, 8625
of carbapenem-2-yl triflate with mono-substituted alkenes, synth of 2-alkenylcarbapenems, 2987
catalyzed by preformed Pd and Pd/Ni clusters, 4499
of 2-chloro-5-iodopyridine with homotropene and bishomotropene derivs, 3911
coupling of aryl bromides with butyl methacrylate, 6535
Heck arylation of *N*-allylsulfonamide and subsequent hydroformylation, synth of 4-aryl-2,3-dihydropyrroles, 3947
indole synth on solid support by intramolecular –, 7189
intramolecular – of 4-bromoindole deriv in synth of chanoclavine-I, 9309
intramolecular – coupling of *o*-iodophenyl ester system to methylcyclopentene, lactone formation as part of herbertenediol synth, 1261
intramolecular – of *N*-(*o*-iodobenzoyl)-2-pyridones, synth of benz[*a*]- and dibenz[*a,f*]-indolizines and benzo[*b*]quinolizines, 793
intramolecular cyclization of halo-alkene group to alkene in acetonitrile-water, influence of solvent on regioselectivity, 2003
intramolecular Heck reaction of enamidone, synth of benzothienoindolizidines, 7707
and intramolecular radical cyclisation of *N*-allylisogramine deriv, synth of 4-substituted-1,2,3,4-tetrahydro-β-carbolines, 2659

iodoarene to acetylarene using 1-ethoxyvinyl tributyl tin on solid phase resin, 1145
for synth of CP-122,288, anti-migraine agent and conformationally restricted analogue of sumatriptan, Heck reaction using 2,6-dibromoaniline, 4289
for synth of ethyl (*E*) and (*Z*)-3-aryl-3-phenylpropenoates, 7449
Hormones
(+)-estrone, estrogenic steroid hormone, synth from racemic 4-t-butoxy-2-cyclopentenone, 7403
Horner-Emmons reaction
of benzopyrano-isoxazolidines, synth of cyclohexylidene alcohols, aldehydes and ketones and also fully reduced polypropionate units including (+)-siphonarienone, 1077, 1081
Horner-Emmons-Wadsworth reactions
see Emmons-Horner-Wadsworth reactions
Horner-Wittig reactions
of (*E*)-5,5′-dimesitylbifuranylidenedione, 9255
see also Wittig reactions
Host compds
butenolide recognition by cleft type receptors based on chromenone derivs, synth, 1485
calix[4]arene derivs with highly strained structures by intramolecular reductive dimerisation of appropriate formyl groups in the presence of low-valent titanium agents, 645
calix[4]crown bearing an ionophoric cavity on the lower rim and two pyrene groups on the upper rim, synth, metal-induced conformational change and use for metal sensing and guest tweezing, 77
calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units, synth in order to capture C_{60} in organic solution, 73
complexation of cyclodextrins with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, no distinction between host and guest, 7433
deformed cyclodextrins, dependence of guest-binding ability on cavity shape, 1825
encapsulation of small organic molecules by a self-assembled molecular capsule through charged hydrogen bonding interaction, 8501
Kemp's imide-linked coumarin, photocycloaddition with thymine, molecular recognition, 8523
monomethyl ether of monodeoxycalix[4]arene, C-H acidity effect of guest molecules on complexation with, 1435
receptor models, design and synth of a novel tricyclic scaffold for the assembly of, 7035
Stoddart's cyclobis(paraquat-*p*-phenylene) receptor for recognition of phenyl glycopyranoside and β anomer of phenyl glucosides, 263, 287
Hunsdiecker reactions
manganese(II) acetate catalysed reactions of αβ-unsaturated aromatic carboxylic acids with NBS, route to haloalkenes and α-(dibromomethyl)benzenemethanols, 2623
Hydantoins
see Imidazolidines, imidazolidinones
Hydrazines
alkylation of using a copper(II)-aluminium(III) couple, 3295
ε-*N*-aminolysine, synth on solid phase by *N*-amination, incorporation into peptides, 7259
C(α)-azaasparagine- and aza-alanine-containing peptides, Z-NH-N(CH_2COX)-Pro and related compds, synth and structure, 183
(5-ethoxy-1,5-diaryl-2,4-pentadienylidene)hydrazinium salts, synth by reaction of (5-ethoxy-1,5-diaryl-2,4-pentadienylidene)ethyloxonium perchlorate with hydrazines, 6717
chiral hydrazines by reaction of organolithiums with chiral hydrazones derived from (*S*)-indoline-2-carboxylic acid, 5543
hydrazine reaction with 10-deacetyl-10-dehydrobaccatin III-type taxanes to yield the 7,9-pyrazoline adducts retaining their anticancer activity, 7837
α-hydrazinonitriles, Pd-catalyzed dehydrogenation using cyclopentene, formation of hydrazidoyl cyanides, 8771
α-hydrazinonitriles, synth by addition of trimethylsilyl cyanide to chiral hydrazones derived from (*S*)-1-amino-2-methoxymethylindoline, 7795
o-nitrobenzenesulfonylhydrazines, by Mitsunobu alkylation using allylic alcohols, formation of transposed alkenes, 4841
protected hydrazines by Mitsunobu reaction of primary and secondary alcohols, 4327
substituted hydrazines, reaction with phthalimides, synth of phthalhydrazide libraries, 3351
Hydrazones
alkylation of using a copper(II)-aluminium(III) couple, 3295
chiral hydrazones derived from (*S*)-1-amino-2-methoxymethylindoline, addition of trimethylsilyl cyanide, synth of chiral α-hydrazinonitriles, 7795
chiral hydrazones derived from (*S*)-indoline-2-carboxylic acid, addition reactions with organolithiums, synth of hydrazines, 5543

fluorenone phenylhydrazone pyrolysis, cyclization of radicals forming phenanthridines, 2399
hydrazobenzenes, synth by reduction of azobenzenes and azoxybenzenes by sodium dithionite using dioctylviologen as an electron transfer catalyst, 6721
stereospecific addition of formaldehyde dialkylhydrazones to sugar aldehydes, synth of cyanohydrins and α-hydroxyaldehydes, 5787
tosylhydrazone lithium salts, reaction with C_{60}, synth of 6,5 open and 6,6 closed cycloalkylidenefullerenes, 4651
2,4,6-triisopropylsulfonyl hydrazone, Shapiro-Suzuki reaction of to provide aryl-alkenes, 429
trisylhydrazone deriv of a ketone, conversion to vinyllithium intermediate which could be quenched with tritiated water, synth of tritiated alkenes, 2923
αβ-unsaturated *N,N*-dimethylhydrazones, cycloaddition to quinones on silica gel, dimethylamine addition to quinone side reaction avoided, synth of pyrido[3,2-*g*]quinoline-2,5,10-triones, 6955

Hydrocarbons
adamantane, oxidation by dimethyldioxirane, effect of $CBrCl_3$ and of air, 249
allylic acyloxylation by t-butyl perbenzoate, $Cu(OTf)_2$/DBN or DBU as catalyst of Kharasch reaction, 8435
benzo[*b*]-, dibenzo[*b,e* and *b,k*]-, benzo[*e*]naphtho[2,1-*b*]-, benzo[*k*]naphtho[2,1-*b*]-fluoranthenes, benzo[*l*]indeno[1,2,3-*hi*]chrysene, synth, 1535
benzo[*c*]phenanthrene, thermolysis yields cyclopenta[*cd*]pyrene and benzo[*ghi*]fluoranthene, conversion of an alternant $C_{18}H_{12}$ PAH into a non-alternant $C_{18}H_{10}$ PAHs, 1121
carboxylation of saturated – in Gif systems, 1555
conversion into their corresponding homologous carboxylic acids by treatment with iron pentacarbonyl and hydrogen peroxide in pyridine-acetic acid, 8137
decalins, adamantanes, tetracyclo[6.2.1.1^{3,6}.0^{2,7}]-dodecane, tetrahydrodicyclopentadiene, aerobic oxidation using catalytic *N*-hydroxyphthalimide/$Co(acac)_2$, 4993
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, complexation of – by dimer, transport rates through water, 8451
5-methylchrysene and its 2-hydroxy- and 8-hydroxy derivs, synth from 2-naphthalene boronic acid, 6271
[7]phenacenes (naphtho[1,2-*c*]picenes), synth, 7173
preoleanatetraene, bicyclic triterpenoid hydrocarbon from rhizomes of *Polypodiodes formosana*, structure, 4381
saturated alkanes and benzenoid aromatics, oxidation by H_2O_2 in air catalyzed by methyltrioxorhenium, 6487
saturated hydrocarbons, functionalisation of in Gif-type systems using 2-methyl-1,4-naphthoquinone, 1755
tri-t-butyl(trimethylsilyl)tetrahedrane and tri-t-butyl(isopropoxydimethylsilyl)tetrahedrane, study of electrochemical oxidations of by cyclic voltammetry, 583

Hydroformylation
diastereoselective Rh-catalyzed – of protected allylic alcohols, 6877

Hydrogen bonding
approach to electronic communication through transannular hydrogen bond, synth of cyclic diamines bearing donor and acceptor groups, 4721
barbituric acid–melamine – in assembly of bifunctional receptors, calixarene tetracetic acid as cation and Zn-porphyrin as anion receptor, 9341
2,1λ^5-benzoxaphospholine,1-t-butyl-1-[2-(α-hydroxyperfluoroisopropyl)phenyl]-3,3-bis(trifluoromethyl)-, and its MeCN solvate, showing difference in – by X-ray, 8409
between the bridging CO and neighbouring phenolic OH groups in *p*-t-butyloxocalix[4]-, [5]-, and [6]arenes, 5959
bis-isophthalic acid deriv forming H-bonded cavity network in crystal, 2327
calix[4]arene-calix[4]pyrrole linked by four CH_2O groups, cylindrical pseudo dimer, – from pyrrole NH to bridge O atoms, 7881
in complex of 10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione with urea and ethanol, 8905
encapsulation of small organic molecules by a self-assembled molecular capsule through charged hydrogen bonding interaction, 8501
enhanced intramolecular amide-amide hydrogen bonding through cooperativity, 2189
ferrocene 1,1′-dicarboxylic acid, bis-aminoacid derivatives, ordered conformation modelling – in a polypeptide antiparallel β-sheet, 5289
2(5*H*)-furanone, – to a ureido-chromone-2-carboxamide, catalysis of pyrrolidine addition, 6947

molecular sheets of 1,2-bis(2′-tetrahydropyrimidyl)ethane and dihydrogenopyrophosphate ribbons interconnected through $H_2P_2O_7^{2-}$ anions by hydrogen bonds, synth, 1405
NMR determination of – between flavin and 2-/2,6-di-acylaminopyridines, 4435
proximity effect induced on a carboxylate by a urea binding site positioned near an electrophilic centre, kinetic investigation, 101
three-point molecular recognition of dimethyl aspartate by a bis(2,7-dihydroxy-1-naphthyl) zinc porphyrin, kinetics of association and dissociation by NMR relaxation rates, 5369
in 1,3,5-triazine.2Br_2 complex, C-H··N interactions, 3505

Hydrogenation
of amides by the use of bimetallic catalysts consisting of group 8-10 and group 6 or 7 metals, 6749
aminoacids containing Ph_2P groups, incorporation into peptides on polymer support, complexation with Rh(I) and chiral hydrogenations, 6475
asymmetric – of $\alpha\beta$-unsaturated carboxylic acids in supercritical CO_2, 2813
asymmetric – of β-ketophosphonates and β-ketothiophosphonates with Ru(II) catalysts, synth of β-hydroxyphosphonates substituted with a thienyl ring, 7721
asymmetric – of imines using tridentate phosphine and phosphinite complexes of Ir(I) and Rh(I), 4937
asymmetric – of *N*-tosylimines catalysed by Ru[(*R*)-2,2′-bis(diphenylphosphino)-1,1′-binaphthyl]$(O_2CCH_3)_2$, synth of the corresponding amines, 6669
catalytic – of enones using Cu/SiO_2, 3529
catalytic partial hydrogenation of 5,10-dimethylbisdehydro[13]annulenone, synth of 5,10-dimethyl[13]annulenone, a monocyclic annulenone larger than tropone, 2601
dehydrowarfarin and Me enol ethers, asymmetric – using DuPHOS-Rh catalysis, 8321
enantioselective transfer hydrogenation of alkyl aryl ketones catalysed by ruthenium complexes of chiral phosphinooxazolines, 1381
β-fluoro-allylic alcohols, – to form fluorohydrins, 2007
hydroxyl-directed catalytic – in stereocontrolled synth of kainoids, 6923
olefin – using $NiCl_2.2H_2O/Li$/naphthalene, 6925
ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
cis-selective semihydrogenation of acetylenes using a nickel boride catalyst, 1057
semi– of acetylenes over Pd-catalyst on BER in the presence of CsI, synth of the corresponding olefins or *cis*-olefins, 8527
transfer –, use of triethylammonium hypophosphite and Ru(II) catalysts, diastereoselection, 6599

Hydrogenolysis
palladium catalysed – of 1,1-dibromo-1-alkenes by tributyltin hydride, synth of (*Z*)-1-bromo-1-alkenes, 6759

Hydrolysis
acid-catalyzed – of 2-methyloximino-tetrahydrofurans to butanolides, 229
acidic – of epoxyamides derived from 1-tetralones, synth of 2-tetralones, 3243
of alkane-1,n-diol bis-acetates into the corresponding monoacetate catalysed by lipase from pig pancreas, 625
bis-ketol phosphate triesters, rate of initial ketol group –, 1169
of diacetate of (*E*)-2-substituted-2-butene-1,4-diol, synth of 3-alkyl-4-hydroxy-2-butenyl acetate, 91
dipeptide esters, diastereoselectivity of –, pH and temperature effects, 3461
enantioselective – of epoxyindene and dihydronaphthalene epoxides by the fungus *Beauveria sulfurescens*, synth of enantiopure epoxides and vicinal diols, 3319
enzymatic – of 3-benzyloxyglutaronitrile, synth of (*S*)-3-(benzyloxy)-4-cyanobutanoic acid which can be transformed to (*R*)-4-hydroxy-5-cyanopentene, a known precursor of the lactone moiety of mevinic acids, 6001
enzymatic hydrolysis of allyl acetates to the corresponding allyl alcohols, dynamic kinetic resolution, 1859
of triphenylporphyrinylmethylphosphonium iodides, synth of *meso*-methylporphyrins, 7147

Hydroxamic acids and derivs
D-arabinohydroxamic acid 5-*O*-phosphate, synth as a transition state analogue inhibitor of glucose-6-phosphate isomerase, 1221
chiral phase transfer synthesis of aziridines from olefins and *N*-arylhydroxamic acids, 3183
α-chloro–, synth from *gem*-dicyano epoxides, 179
D-*arabino*-hydroxamic acid and D-threonohydroxamic acid, inhibitors of D-xylose isomerases, synth by from D-arabinose, 2237
hydroximoyl chlorides, synth by reaction of

nitroalkanes with a base and subsequent reaction with $TiCl_4$, 6407
radical cyclization of *O*-allyl αβ-unsaturated hydroximidates, 229
synth of aldehydes and ketones using *N*-methoxyamides on solid support, 1161
synth of glucosinolates bearing external thio function from corresponding hydroximoyl chlorides and 1-thioglucose deriv, 5699
synth on Wang resin *via* *O*-bound hydroxylamine, 8045

Hydroxy-acids/-esters
anti-β-amino-α-hydroxy acid derivs, synth using nucleophilic epoxidation of 1-arylthio-1-nitroalkenes, 2311
chiral α-hydroxyacids by manganese(III)-salen oxidation of ketene silyl acetals, 6531
β-hydroxy esters, conjugated esters or hydroxy ketene acetals, synth by reaction of 2,2-di-(ethoxy)vinyllithium with carbonyl compds, 5507
α-hydroxy esters, stereospecific synth using Davis's oxaziridine, 7473
β-hydroxyphosphonates substituted with a thienyl ring, synth by asymmetric hydrogenation of β-ketophosphonates and β-ketothiophosphonates with Ru(II) catalysts, 7721
α-hydroxyphosphonates, synth using natural phosphate, natural phosphate doped with potassium fluoride and sodium phosphate dodecahydrate without solvents, 3999
non-protected β-hydroxy esters, radical allylation of after formation of chelated aluminium alkoxides upon treatment with $MeAlR_2$, 6335

Hydroxy-ethers
by reaction of organometallic reagents with symmetrical and unsymmetrical endo peroxides, 6635

Hydroxylamines
α-(*O*-benzylhydroxylamino) acids and derivs, synth by Zn-mediated allylation of benzyloxime in aqueous media, 5273
(+)-FR 900 482, antitumor antibiotic with hydroxylamine hemiacetal function, synth of natural enantiomer, 3471, 3475, 3479
hydroxylamine hydrochloride, reaction with α-cyano α-alkoxy carbonyl epoxides, synth of β-alkoxy α-oximino esters, 4693
hydroxylamines derived from limonene, intramolecular cyclisation of, reverse-Cope mechanism rather than acid-catalysed process, 6417
α-ketoester oximes, enantioselective allylation using allylzinc and external chiral ligand, α-(benzyloxyamino)-ester synth, 8997
N-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine, Mitsunobu reaction with α-hydroxyphosphonates, synth of *N*-hydroxy-α-amino phosphonate derivs, 6331
see also Hydroxamic acids

Hydroxylation
of an acyloxazolidinone enolate, key step in synth of (1*S*,2*R*)-imidazoleglycerol, 9259
adamantanes, – by O_2/*N*-hydroxyphthalimide/$Co(acac)_2$ and other transition metal ions, 4993
4-amidocyclopent-2-enecarboxamides, *cis*-di– by OsO_4/NMMO, unexpected stereoselectivity, 4601
asymmetric benzylic – using catalytic Mn(III)-salen complexes and PhIO or C_6F_5IO, 4979
asymmetric di– of chiral γ-amino-αβ-unsaturated esters, tuning protective groups from mismatched to matched cases, 9293
asymmetric di–, construction of two vic-diol moieties in approach to AAL toxins, 6169
[3+2] *vs* [2+2] cycloaddition in di– by OsO_4 catalyzed by bis-cinchonine-pyridazine, distinction by kinetic isotope effects, 4899
di– of olefins by t-BuOOH catalyzed by β-cyclodextrin borate, 3581
di– of 2-hydroxymethyl- and 2-hydroxyethyl-1,3-butadiene derivs using bis-cinchona alkaloid catalysts, 1735, 1739
OsO_4 di– of metallochlorins, effect of substituents, bacterio- and isobacterio-chlorin synth, 3781
di– of olefins containing thio functions, conditions for AD-mix or OsO_4/ferricyanide – without *S*-oxidation, 4427
dihydroxylation of cyclic allylic alcohols, 3407
dihydroxylation/glycol cleavage of tricarbonyl-(triene)iron complexes, 423
π-facial selectivity in dihydroxylation of bicyclo-[2.2.2]oct-2-enes with 5,6-*cis*-*exo*-substituted electron withdrawing groups, 1321
or fluorination of non activated C-H bonds in amides and ketones using CCl_4 or NBS in superacids, 2967
α-hydroxy esters, stereospecific synth using Davis's oxaziridine, 7473
osmium tetroxyde-catalysed dihydroxylation of allenic compds in the presence of *N*-methylmorpholine oxide, synth of α-ketols, 3333
phenol to catechol *via* oxidation of organolithium using oxodiperoxymolybdenum reagent, 1261
Sharpless asymmetric dihydroxylation of chiral α-furfuryl amide, synth of δ-hydroxyl-α-amino

lactones, 6371
Sharpless asymmetric dihydroxylation of a sterically hindered 3-methylidene-benzofuran, reversal in facial selectivity, 1375
tyrosinase in − of phenols, oxidation and Diels-Alder reaction cascade, 3833

Hypervalent compds
imino-iodonium zwitterions from 2-amino-1,4-naphthoquinone and ArI(III) compds, 913

Hypervalent elements
asymmetric benzylic hydroxylation using catalytic Mn(III)-salen complexes and PhIO or C_6F_5IO, 4979
cleavage of hexuronic and penturonic acids by $PhI(OAc)_2/I_2$, synth of alduronic acid lactones, 1687
1,3-dihydro-3-methyl-3-phenyl-2,1λ^3-benzoxiodoles, racemic and chiral, with various 1-substituents, synth, 6453
iodine(III), aryl transfer reaction of (diacetoxyiodo)arenes with tetraarylborates in AcOH, synth of diaryliodonium tetraarylborates, 8421
phenyliodine(III) diacetate/TMSBr, bromoacetoxylation of 1,4-dimethoxynaphthalenes, 6443

Imidates
see Imidic acids and derivs

Imidazoles/imidazolines
2-acetyl-4-(4-amino-1,2,3-trihydroxybutyl)−, synth and prep of fluorescent and biotinylated analogues, 6209
N-acyl −, Wittig reactions with stabilized phosphoranes, synth of β-acyl- (carboxy-)vinyl −, 7249
3-amino-2-ethoxycarbonyl imidazo[1,2-*a*]pyridines, synth by reaction of heterocyclic amidines with benzotriazole and ethyl flyoxylate or ethyl glyoxylate *via* α-benzotriazolyl-α-amidino esters, 1787
4-(β-benzoylethenyl)−, cycloadditions and HOMO-LUMO calculations, synth of 4-(5-oxopyrrolidin-3-yl)−, 3915
bredinin, − nucleoside antibiotic, synth of 2′-deoxy and 5′-phosphate derivs, photochemical cleavage and reconstruction of − ring, 187
2-bromo-4,5-dicyanoimidazole as a catalyst for conversion of cyclic phosphoramidites into phosphite triesters and dinucleotide phosphorothioates, 969, 973, 977
cycic voltammograms of bridged and unbridged 2,2′-bi-imidazolium and bi-benzimidazolium salts, isolation of aza-analogues of TTF, 2357
cyclodextrin-bis-imidazole enzyme mimic as catalyst for intramolecular aldol condensation of a dialdehyde carrying a t-butylphenyl group, 2541
2,2-dialkyl-1,3-dibenzyl-2,3-dihydrobenzimidazoles, rearrangement to 1-benzyl-3,3-dialkyl-2-phenyl-1,2,3,4-tetrahydroquinoxalines, 3355
2,6-dichloro-3-iodoimidazo[1,2-*a*]pyridine, coupling reaction of with 2,3-dihydrofuran, synth of imidazo[1,2-*a*]pyridine *C*-nucleosides, 6275
6,7-dichloro-1- and 3- (2,3,5-tri-*O*-benzoyl-β-D-ribofuranosyl)imidazo[4,5-*b*]quinolin-2-one by ribosylation of 6,7-dichloroimidazo[4,5-*b*]-quinolin-2-one, 3263
ferrocene-containing imidazole rings, synth from β-ferrocenylvinyliminophosphoranes by aza-Wittig reactions, 7829
imidazo-2-yl and pyid-2-ylpyruvic acids, decarbonylation of by sodium perborate at room temperature, synth of the corresponding acetic acids, 1901
5-imidazol-1-yl α,α-difluoroketones, synth by substitution of *N,N*-dimethylamino α,α-difluoroketones with tetramethylammonium salts of imidazole, 5119
imidazole-acridine conjugates as mimics of ribonuclease A, 4417
(1*S*,2*R*)-imidazoleglycerol, synth involving hydroxylation of an acyloxazolidinone enolate, alkylation of a thioester and reduction of the resulting ketone, 9259
imidazolines by reaction of low valent titanium reagent with imines, 4767
Michael reaction with α,β-unsaturated nitriles and esters catalysed by bicyclic guanidines, kinetic *versus* thermodynamic control, 4423
miconazole analogs, synth via iodoetherification on Merrifield resin, 5687
reductive amination of nitroimidazolyl acetaldehyde using diamines, synth of tertiary diamines, 6081
4,4,5,5-tetramethylimidazoline-1-oxyl 3-oxides, attachment as spin labels to calix[4]arene podands and cryptands, 8755
topsentin, deoxytopsentin and bromotopsentin, marine bis-indole alkaloids, synth involving 1,2-addition/oxidation to construct the bis-heteroarylketones and heteroarylation involving 3-stannylindoles, 5503
1-tosyl-5-aryl-2-imidazoline-4-carboxylates by stereoselective cycloaddition of $MeOCOCH_2NC$ to *N*-tosylaldimines, catalyzed by Au(I) complex, 4969

1,3,5-tri-*O*-benzoyl-2-imidazolesulfonyl-α-D-ribo furanose, fluorination of, synth of 1,3,5-tri-*O*-benzoyl-2-deoxy-2-fluoro-α-D-arabinofuranose *via* a fluorosulfonate intermediate, 17
Ugi four-component condensation for synth of imidazoles on Wang resin, 751
Wang resin carrying –; unsymmetrical 1,4-bis-imidazolyl benzene, 835

Imidazolidines/imidazolidinones

5-alkoxyhydantoins, solution and solid phase synth of libraries of hydantoins with a three-fold functional diversity, 5835
bisimidazolidines/bisimidazolylidenes from 1,2-diamines and hexachloroacetone, 5265
camphor-derived imidazolidinone auxiliaries for asymmetric aldol reactions, opposite diastereoselectivity using Ti and Li enolates, 6931
by cycloaddition of cinnamylideneanilines to 2-benzoyl-1-cyclohexyl-3-phenyl-aziridine induced by microwave irradiation, 4203
exo-2,3-diaminobornane–derived imidazolidinone as chiral auxiliary for enolate alkylations, 4565
diethylenetri-(imidazolidin-2-one) deriv, synth as a nonnatural biopolymer scaffold, 5309
(4*R*,5*S*)-1,5-dimethyl-4-phenylimidazolidin-2-one, auxiliary for dynamic kinetic resolution of α-bromopropionic acid derivs, crystallization-induced resolution, 1301
N,N'-disubstituted arylthiohydantoins, reaction with methyl or ethyl iodide and sodium methoxide, conversion to the corresponding hydantoins, mechanism, 7727
hydantoin-4-imides, synth on solid support using Ugi's method, 7489
imidazolidine by reaction of low valent titanium reagent with imines, 4767
solid phase synth of hydantoins from a set of amino acids and primary amines by using a carbamate linker, 837
use of 2-oxoimidazolidine-4-carboxylate as chiral auxiliary, synth of α-amino acids, 4957

Imides

carbodiimides from ureas using dimethylphosgeniminium chloride as a dehydrating agent, 7047
cyclic – derived from phenethylamine, Parham-type cyclizations giving fused tetrahydroisoquinolines 6193
cyclic –, ring-opening by amines catalyzed by $AlCl_3$, 1217
fused cyclobutenomaleimides, reactive dienophiles for molrac construction by cycloaddition with cyclic dienes, 3773
imide with 2-naphthoyloxy group as (9-)butyladenine receptor, NMR complexation-induced ^1H shifts, 6109
N-iodoalkyl cyclic imides, reductive cyclisation to nitrogen-fused polycyclic amides induced by samarium diiodide, 2577
maleimide-assisted on-resin peptide macrocyclization, 5665
N-phenethylsuccinimide, sequential addition of organolithium reagents and *N*-acyliminium ion cyclisation of, synth of pyrrolo[2,1-*a*]isoquinolones, 7841
phthalimides, reaction with substituted hydrazines, synth of phthalhydrazide libraries, 3351
3-phthalimido β-lactams, diastereoselective synth *via* a two step Staudinger reaction, 4409
spiroindoline imides, synth by photocyclisation of enaminoesters and subsequent transformation into precursors of *Aspidosperma* alkaloids, 37
O-trichloroacetimidates, synth by reaction of the substrate with trichloroacetonitrile in dichloromethane and potassium hydroxide containing catalytic tetra-n-butylammonium hydrogen sulfate, 1481

Imidic acids and derivs

azomethine ylids, imidate methylids and thioimidate methylids, generation in the presence of electron deficient dipolarophiles gives direct access to spiro-fused pyrrolidines, 5163
cyanocyclopentadiene-$Cr(CO)_2(NO)$, synth, formation of methyl imidate hydrochloride, 6561
N,N-dimethylacrylamide/Tf_2O complex, reaction with electron-rich aromatic compounds, synth of indan-1-one and dihydrochalcone derivs, 4199
indolizino[1,2-*b*]- and pyrrolo[3,4-*b*]-quinolines by intramolecular cycloadditions of *N*-arylimidates, 5679, 5683
10-membered bicyclic imino-ether, formation by intramolecular addition of carbenoid to amide carbonyl O, 8035
polyfluoroalkylimidoyl iodides, synth by radical addition of R_FI to aryl isocyanides, 7999
trichloroacetimidates as sugar donors in solid phase oligosaccharide synth, 3989

Imines

aldimines, aldol-type reactions forming αβ-unsaturated – catalyzed by Sm compounds, 7291
allylation of using the allylic tin(IV)-tin(II) chloride-acetonitrile system, 5951
6-amino-2,5-imino-D-glucitol and 6-amino-1,5-imino-D-mannitol substituted by a free hydroxyl

group, synth from *N*-Boc bis-aziridine, 7717
for aminoalkyl-decyanation of 4-pyridinecarbonitrile, synth of 4-pyridinemethanamines, 3009
5-arylimino-4-chloro-5*H*-1,2,3-dithiazoles, reaction with stabilised phosphoranes, ring cleavage following attack at S, 869
2-arylimino-3,3,3-trifluoropropanoates, reaction with organometallic reagents, fluoroolefin synth, 2045
asymmetric hydrogenation using tridentate phosphine and phosphinite complexes of Ir(I) and Rh(I), 4937
azomethine imines by 1,3-dipolar cycloreversion of 1,3,4-oxadiazolidine, construction of pyrazolidine heterocycles, 4323
cinnamylideneanilines, cycloaddition to 2-benzoyl-1-cyclohexyl-3-phenyl-aziridineinduced by microwave irradiation, synth of imidazolidines, 4203
condensation of – by Wang resin bound H-phosphonates, synth of α-amino phosphonates and phosphonic acids, 5457
dibenzylidene sulfamides, intramolecular – cross-coupling, synth of 1,2,5-thiadiazolidine 1,1-dioxides and 1,2-diaryl ethylenediamines, 2859
β-D-(1→3)-C-linked 1,5,6-trideoxy-1,5-imino-galactoside of D-altrose derivs, synth by cross-aldolisation of 2,6,7-trideoxy-2,6-imino-D-glycero-L-mannose and a 7-oxanorbornanone, 483
fluxional properties of η^4-cinnamylideneaniline-tricarbonyl iron complexes, 6543
functionalised cyclic imines by addition of Grignard reagents to ω-bromonitriles and γ,δ-unsaturated nitriles, 6227
glycine Schiff bases, cycloadditions with crotonate and 4-bromocrotonate, synth of pyrrolidines and cyclopropanes, and of CCG-II, 2857, corrig. 5027
glycine t-butyl ester Schiff base, bis alkylation of, synth of 1,1′-binaphthyl-substituted α-aminoisobutyric acid, a new chiral atropisomeric α,α-disubstituted glycine, 2971
homolytic α-fragmentation of –, isocyanides as source and fate of imidoyl radicals, 9337
1-hydroxyiminophosphonates, reduction with $NaBH_4$ in the presence of molybdenum or nickel, synth of 1-aminophosphonic acids, 407
imino ester Ru(II) complexes, formation by oxidation and chiral recognition of amino esters by dioxoruthenium(VI) porphyrins, 6701
imino sugar analogues, synth involving intramolecular 1,3-dipolar cycloaddition of 5-azido-5-deoxyaldopentose ketene dithioacetal bis(sulfones), 3925
bis(iminodiacetic acid)-appended myoglobin, synth by cofactor reconstruction method, 9233
ketenimines, intramolecular [2+2] cycloaddition with imines, synth of azeto[2,1-*b*]quinazolines, 8945
methyl isocyanoacetate, stereoselective cycloaddition to *N*-tosylaldimines, catalysis by Au(I) complex, formation of imidazolines, 4969
nucleophilic allylation using allyl bromide and Mg or Zn, 4187
phenolic Schiff bases, transformation to 2-arylbenzoxazoles by thianthrene cation radical perchlorate in the presence of 2,6-di-t-butyl-4-methylpyridine, 8869
N-phenylsulfonyl-1,4-benzoquinone monoimines, reactions with styrenes, key step in synth of benzofuranoid lignans (±)-licarin B and eupomatenoids-1 and -12, 6969
reaction with a low valent titanium reagent prepared by reduction of $TiCl_4$, formation of imidazolidine derivs, 4767
reaction with 2,2,6-trimethyl-4*H*-1,3-dioxin-4-one, synth of *N*-alkenyl acetoacetamides, 7429
silacyclobutanimines, synth by isonitrile insertions of siliranes, 3675
silyl imines, boron aldol reaction of α-halosubstituted thioacetates with, enantio- and diastereoselective synth of aziridines, 3747
N-sulfinyl–, diastereofacial selectivity in addition of ester enolates, 3881
synth of tribactam precursor by cycloaddition of t-butyl lithioacetate to a trimethylsilylimine, 2467
N-*p*-toluenesulfinyl benzaldimine, cycloadditions in synth of 2-arylpyrrolines, 5755
N-tosylimines, asymmetric hydrogenation of catalysed by Ru[(*R*)-2,2′-bis(diphenylphosphino)-1,1′-binaphthyl]$(O_2CCH_3)_2$, synth of the corresponding amines, 6669
tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), isolation from *Latrunculia* South African sponge, 7135
two tripodal precursors form macrobicyclic Schiff base cryptands when size-matched, macrotricyclic dimers when mis-matched, 8443
ytterbium Lewis acid catalysed Diels-Alder reactions of – with alkenes, 7357

Iminium salts
N-acyl –, coupling of 1-t-butoxycarbonyl-2-methoxypyrrolidines with 2-(trimethylsilyloxy)furan and 1-t-butoxycarbonyl-2-(t-butyldimethylsilyloxy)pyrrole, 7963
acyliminium ion with a ketene dithioacetal terminator, cationic cyclisation of in synth of 1β-methylcarbapenems, 7811
acyliminium salts derived from Friedel Crafts reaction of a pyroglutamic acid deriv, cyclisation of to give a condensed *N*-acylheterocycle which provides access to an amine, 485
N-acyliminium salts derived from reaction of biscarbamates with trifluoromethanesulfonic anhydride, reaction with 1,1-difluorovinyl methyl ethers, synth of β-amino-α,α-difluoroketones, 1061, corrig. 2515
chiral iminium ion, nucleophilic addition with chiral enolates, approach to oxathiazepine ring system of eudistomin and eudistomidin alkaloids, 575
dimethylphosgeniminium chloride as a dehydrating agent for the prep of carbodiimides from ureas, 7047
dithiolane-isocyanate iminium methylides, hetero-1,3-dipolar cycloaddition of, route to 1,3-oxazolidine- and thiazolidine-2-thiones, 711
epoxides generated from cyclic ene carbamates as effective *N*-acyl iminium ion precursors in synth of α-substituted, β-hydroxy piperidines and pyrrolidines, 3255
N-phthaloyl iminium ions and amino-substituted radicals derived from threonine, stereoselectivity of the reactions of, 2569
Imino ethers
see Imidic acids and derivs
Iminophosphoranes
see Phosphine imines
Immunostimulation
(+)-conagenin, immunomodulator produced by *Streptomyces roseosporus*, synth involving asymmetric aldol reaction of propiophenone with acetaldehyde followed by reduction, 4047, corrig. 4287
flavolipin, immunoactivating bacterial lipid, synth of all stereoisomers of proposed structure, but none identical with the natural product, 3875
Immunosuppressive compds
cocaine-diamide hapten, design and synth as an anti-cocaine immune response for the treatment of cocaine abuse, 5479
microcolin analogues, synth of *N*-substituted pyrrolin-2-ones, constituents of, 291
pironetin (PA-48153C), 5,6-dihydropyran-2-one deriv, synth, 6615
Inclusion
capture of C_{60} by calix[6]arenes bearing *N,N*-dialkylaniline units or *m*-phenylenediamine units in organic solution, 73
complex of 10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione with urea and ethanol, 8905
encapsulation of small organic molecules by a self-assembled molecular capsule through charged hydrogen bonding interaction, 8501
exciplex fluorescence in – complexes of naphthalene derivatives, 4833
linear koilate obtained by self-assembly of linear koilands and hexadiyne, synth and X-ray analysis, 1401
Indanes
hydrindane framework, construction of from α,β,γ,δ-unsaturated esters by intramolecular 1,6-conjugate addition, total synth of (±)-coronafacic acid, 6745
Indanes/hydrindanes
chiral synth of 3a,4-dimethylhydrindane-2,6-dione and -2-ones from (*R*)-carvone, 1679
diastereoselective *trans*-hydrindane synth, approach to CD rings of vitamin D_3 7657
1,1-dimethylindane, asymmetric benzylic hydroxylation using catalytic Mn(III)-salen complexes and PhIO or C_6F_5IO, 4979
cis-fused hydrindane with dicarboxylate and hydroxy functions, synth, 2335, corrig. 7665
hydrindane synth by closure of both rings using β-hydroxy-cobaloxime chemistry, 9369
indane ring systems from [6+3]-cycloaddition of 2-oxyallyl cation and fulveneketene acetal, 659
indane-derived C_2-symmetric bis(oxazoline)s in two-point binding asymmetric Diels-Alder reactions of acrylimide and cyclopentadiene, 1725
cis-indane-1,2-diol, conversion into chiral C_2-symmetric bis(oxazolines) using Ritter reaction, 813
indan-1-one derivs by reaction of *N,N*-dimethylacrylamide/Tf_2O complex with electron-rich aromatic compounds, 4199
9-methylenetricyclo[4.3.0.$0^{3,8}$]nonan-2-one, $(Me_3Si)_3Si\cdot$ mediated cleavage to hydrindane systems, 7867
spiro[cyclopentane-1,1′-indan]-2,5-dione system, valuable in synth of fredericamycin A, synth by rearrangement of the *trans*-α,β-epoxy acylates

in tetrahydrobenz[*e*]indan systems, 1817

Indazoles

1,3-diaryl –, synth on polymer support, use of single-bead FT IR spectra to monitor reaction, 8325

Indenes

asymmetric epoxidation of – catalysed by the MnLCl/NaOCl system, effect of addition of 4-(3-phenylpropyl)pyridine *N*-oxide, 3271

epoxidation of (±)-3-alkylindenes by chiral Mn(III)-salen analogues, 4533

epoxyindene and dihydronaphthalene epoxides, hydrolysis of by the fungus *Beauveria sulfurescens*, synth of enantiopure epoxides and vicinal diols, 3319

10-*H*indeno[1,2-*g*]quinoline derivs, synth by Diels-Alder reactions of enyne allenes, 999

4,5,6,7-tetrahydroindenes, synth from zirconacyclopentenes, 7521

Indium and compds

In-mediated intramolecular carbocyclization of α-bromomethyl-ω-oxo-αβ-unsaturated esters in aqueous media, 5341

In-mediated coupling of 1,3-dichloro-/-bromopropene with benzaldehydes, synth of 1-aryl-2-chlorobut-3-en-1-ols; possible generation of *gem*-diindio reagent, 8417

In-promoted synth of allyl and propargyl selenides in aqueous medium, 9333

Indoles

acid-catalyzed cyclization of *N*-(1,4-dihydropyrid-4-ylacetyl)indoles to 3,7-methano-2,3,6,7-tetrahydro-1*H*-[1,4]diazonino[1,2-*a*]indol-1-ones, necessity for LiI, 7653

2-amino–, cyclization reactions with acetylenic esters, 4931

trans-3-(2-aminocycloalkyl)indoles, conformationally constrained serotonin analogues, synth by ring opening reaction of *N*-Boc cycloalkylaziridines, 683

6-aminomethyl-4-oxo-4,5,6,7-tetrahydroindoles, synth from 2,5-dimethoxybenzoic acid as CNS agent precursors, 5171

(–)-anhydromacrosalhine-methinemacroline/sarpagine related indole alkaloid, synth by Pictet-Spengler reaction, subsequent coupling with (+)-pleiocarpamine yields the (–)-macrocarpamine alkaloid, 5033, 5037

arcyroxocin A, slime mould indole alkaloid, synth, 4483

1-arylindoles by reaction of indoles with aryl electrophiles in the presence of KF/Al_2O_3 and catalytic 18-crown-6 in DMSO, 299

1-benzenesulfonyl – and 2-t-Boc-isoindole, synth of formal Diels-Alder adduct, 3487, corrig. 6959

2-(3-bromoisonicotinoyl)indole-3-carboxylic acid from reaction of *N*-benzylindole-2,3-dicarboxylic anhydride with (3-bromo-4-pyridyl)triisopropoxytitanium, subsequent conversion to ellipticine, 7753

(2,7-)calix[3]indoles, cone-shaped, synth, x-ray, 241

CP-122,288, anti-migraine agent and conformationally restricted analogue of sumatriptan, synth by Heck reaction using 2,6-dibromoaniline, 4289

2,3-dimethylindole-5,6-quinone, generation, NMR, 4241

3,3-disubstituted oxindoles, formation by palladium-catalyzed cyclization/allene insertion/anion capture cascades, 4221

6-hydroxyindole-3-acetic acid, the aromatic subunit of NPTX-1–6, synth, 7099

(±)-indolmycin, 4-oxooxazolin-5-ylethylindole deriv, synth, 6447

indolmycin, tryptophanyl tRNA synthetase inhibitor, synth of conformationally restricted analogues of from a 4-functionalised indole, 3067

indolo[2,3-*a*]quinolizine system, route to involving cross-coupling of a 2-indolylzinc deriv with 2-halopyridine, hydrogenation of the pyridine ring and cyclisation on indole 3-position, 3071

2,2′-indolylindolines, photooxidation to 2,2′-biindoles, ditryptophan crosslink formation, 5629

intramolecular Heck reaction of 4-bromoindole deriv in synth of chanoclavine-I, 9309

isatin synth *via* umpoled Vilsmeier reagents, 9381

4-keto-4,5,6,7-tetrahydroindoles, synth by intramolecular 1,3-dipolar cycloaddition, 2887

lanthanide(III) triflates as catalysts for condensation of indoles with aldehydes in water, 4467

methyBα-ethyl-1,2,3,4,6,7,12bβ-octahydroindolo-[2,3-*a*]quinolizine-1α-carboxylate, intermediate to tacamine-type indole alkaloids, synth from methyl 5-(1′-hydroxyethyl)nicotinate, 1513

modified Gassman oxindole synth from anilines, 4631

modified Leimgruber-Batcho synth for prep of *N*-substituted –, 6045

1-phenylsulfonyl-2-acyl–, intramolecular nucleophilic β-substitution, application to alkaloid synth, 4283

polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, synth by oxidation of hydroxy-enamines

and -amines, 9203
pyranosylated indolocarbazole, stereoselective ring contraction of, production of the K252a carbohydrate moiety, biosynthetic link between K252a and staurosporine, 3929
12*H*-pyrido[1,2-*a*:3,4-*b'*]diindoles and homofascaplysin C, synth from 3-methylindole, 5203
pyrrolo[3,2,1-*jk*][1]benzazepine core of tuberostemonines, synth, 739
reactions with epoxides catalysed by ytterbium(III) trifluoromethane sulfonate, application to synth of (+)-diolmycin A2, 3727
solid-supported synth by intramolecular Heck reaction, 7189
3-spiro-2-oxindoles and 3-spiro-2(3*H*)-benzofuranones, synth by reaction of 2-halophenols and -anilines with vinyl halides or triflates, 695
staurosporine, indolocarbazole with kinase inhibitory activity, synth of desamido analogues RK-286c and Tan-1030a, 7335
3-substituted indoles, inverse electron demand Diels-Alder reactions with 1,2,4-triazines and 1,2,4,5-tetrazines, 5061
synth of fused pyrido-cyclohepta systems of silicine/methuenine type, 3541
synth on polymer support using polymer-linked phosphonium salt, 7595
synth on solid support, 4869
synth *via* pyrroles using benzotriazole methods, 5641
3,3,5,7-tetranitrooxindole and 3,5,7-trinitroindazole, formation by nitration of oxindole, 9263
tryptamine, conversion into (±)-ibogamine and (±)-*epi*-ibogamine *via* allylation at C-2, 8289
tryptamines, use of 4-arylmethylene-oxazol-5-ones (azlactones) in Pictet-Spengler synth forming tetrahydro-β-carbolines, 5813
use of Pummerer cyclization to generate indoline quaternary C-3 centre, approach to 3,4-seco-akuammilan derivs, 6611

Indolines
N-alkyl-3-hydroxy-3-propargylisoindolin-1-ones, ring enlargement of by treatment with Lewis acids, synth of 2-benzazepine-1,5-diones, 393
3-cyanomethyl-3-(1,1-dimethylallyl)-indolin-2-one, synth, 7525
from *N*-allylanilines *via* aza-Cope rearrangement over zeolites, 5281
indoline 2,2-biscarboxylates, synth employing a tandem bis-alkylation strategy to cyclize the indoline heteroring from *N*-trifluoroacetamide and diethyl bromomalonate, 6965
isoindoline by cyclisation of tricarbonyl[η^6-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium, 3307
isomeric isoindoline dicarboxylic acid analogues, ET_A selective receptor antagonists, synth, 5065
spiroindoline imides, synth by photocyclisation of enaminoesters and subsequent transformation into precursors of *Aspidosperma* alkaloids, 37

Indolizines/indolizidines
benzothienoindolizidines, synth *via* intramolecular aryl radical cyclisation of enamide or intramolecular Heck reaction of enamidone, 7707
(+)-indolizidine 195 B and (+)-monomorine, indolizidine alkaloids, total synth involving formation of a 2,6-disubstituted piperidine intermediate, 111
indolizidine alkaloids 167B and 209D, synth by radical cyclisation of β-aminoacrylates, 1445
oxadehydroindolizidine, precursor for piperidines and indolizidines, synth from (*R*)-phenylglycinol and conversion to (2*S*,3*S*)-3-hydroxypipecolic acid, 4001
polyhydroxylated indolizidines, synth employing decarbonylation of α-tertiary amino acids obtained from D,L-pipecolic acid, 5581

Infrared spectra
of 1-bromo- and -iodo-alkynes, and 2,4-diyne alcohols, 5023

Infrared spectroscopy
single-bead FT − to monitor 1,3-diarylindazole synth on polymer support, 8325

Inositols
1D-and1L-1,2:4,5-di-*O*-cyclohexylidene-3-*O*-allyl-*myo*-inositols, synth as intermediates in route to 1D-*myo*-inositol series, 5081
D-*myo*- derivative, synth from D-tartrate, 885
D-*myo*-inositol 1,4,5-trisphosphate, synth of metabolically stable analogues, 1917
phosphatidylinositol 3,4-bisphosphate, synth of a tritiated benzophenone-linked photoaffinity analogue, 9017

Insecticides
anabasine, synth of 3-(3-pyridyl)-2-azabicyclo-[2.2.2]octane, semi-rigid analogue of anabasine from 3-pyridine bismethylcarbamate, 8841

Insects
aphid insect pigment derivs, metal-mediated diastereoselective synth through use of metal phenolates derived from naphthol, 7851
Bombus and *Psithyrus* (bees), synth of (*S*)-ger-

anylcitronellol pheromone of – via conjugate addition of functionalised copper reagent to 2-substituted *exo*-bornyl crotonates, 7127
Chlamydomonas allensworthii (green flagellate), synth of sex pheromone lurlene of, 1821
Cosmopolites sordidus (banana weevil), synth and absolute configuration of sordidin, the male-produced aggregation pheromone of, 3741
Epilachna varivestis (Mexican bean beetle), synth of the defensive secretion of from methyl 9-ketododecanoate and from *N*-hydroxyethyl lactam, 2141, 2145
Mexican bean beetle, synth of epilachnene, norepilachnene, homoepilachnene, 9-propyl-10-aza-cyclododecan-12-olide and epilachnadiene, azamacrolides isolated from –, 8613
Nephila clavata orb-web spider, total synth of NSTX-3, the polyamine amide spider toxin and glutamate receptor antagonist from, allowing putreanine moiety to be incorporated first, 551
Phtheochroa cranaodes (leafroller moth), synth of sex pheromone ((3*E*,5*Z*)-3,5-dodecadienyl acetate), 1505
Scrobipalpula absoluta (tomato leafminer), structure determination of the sex pheromone of, 411

Insertion reactions
– of carbenoid from $RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl decomposition into Si-H, S-H, N-H and O-H bonds, 8815
carbon-hydrogen – of diazoacetamides of 2-substituted-pyrrolidines, synth of (1*S*,8*S*)-1-hydroxypyrrolizidin-3-one and (–)-heliotridane, pyrrolizidine bases, 1371
1,3-CH(D) insertion reaction of t-butylchlorocarbene-d_6, kinetic isotope effects for, 279
isonitrile insertions of siliranes, synth of silacyclobutanimines, 3675
oxidative insertion of manganese-graphite into organic halides, synth of allyl-, alkenyl- and functionalised arylmanganese reagents, 7009

Iodine and compds
cyclic alkoxylation of aromatic ring using $PhI(OAc)_2/I_2$, 2441

Ionophores
pithomycolide, cyclic Na^+, Ca^{2+}-binding depsipeptide, synth, 6479
tetronasin, biosynthesis, synth and incorporation of di-, tri-, and tetra-ketide precursors, 3511, 3515, 3519

Iron and compds
(diene)$Fe(CO)_3$ complexes by reaction of *meso*-2,4-hexadien-1,6-dial $Fe(CO)_3$ complex with alkylzincs in the presence of (*S*)-(+)-diphenyl-(1-methylpyrrolidin-2-yl) methanol, 3345
tricarbonyl(η^4-cycloheptadienyl)iron tetrafluoroborate, sequential additions of nucleophiles to, synth of bridged bicyclo[4.2.1]nonane and tricyclo[5.2.1.$0^{4,8}$]decane skeletons, 7361
alkenylcyclohexadienyl-$Fe(CO)_3$ and -$Fe(CO)_2PPh_3$, conjugate addition of nucleophiles, long-range asymmetric induction, 9009
(2-aminohomodiene)tricarbonyliron(0) complexes by deprotonation and rearrangement of (1-heterodiene)tricarbonyliron(0) complexes, 691
carboxylation of saturated hydrocarbons in Gif systems, 1555
cationic (η^5-4-methoxycyclohexadienyl)$Fe(CO)_2PPh_3$ complexes, synth, CN^- addition, 4515
Collman reagent with benzyl bromide dibenzylates C_{60}, 2049
convergent iron-mediated construction of the carbazole nucleus of furostifoline, 9183
cyclohexadienyl triflate $Fe(CO)_3$ complex, Stille coupling with vinyl-$SnBu_3$ and ethynyl-$SiMe_3$, effects of solvent, catalyst and ligand, 2731
diene-$Fe(CO)_3$ complexes, enantiomer separation by HPLC on cyclodextrin-bonded stationary phase, 2405
diene iron tricarbonyl complexes for elaboration of 2,3,4-substituted piperidines, synth of (±)-dienomycin C and (±)-4-*epi*-dienomycin C, 3991
dienetricarbonyliron compds, use in synth of 8-, 9- and 10-membered lactones, 6149
$Fe(acac)_3$ catalysed alkenylation of organomanganese compds, synth of substituted olefins, 1773
fluxional properties of η^4-cinnamylideneaniline-tricarbonyl iron complexes, 6543
Gif chemistry, functionalisation of saturated hydrocarbons in Gif-type systems using 2-methyl-1,4-naphthoquinone, 1755
Gif oxidations, effect of carboxylate ligands, possible involvement of a Fe(II)-μ-peroxo dimer in hydrocarbon activation, 1133
intramolecular acylations with dienyl acyl chloride $Fe(CO)_3$ complexes, formation of alkenylidene cyclopentanones and vinyl cyclopentenone $Fe(CO)_3$ complexes, 8763
iron and manganese phthalocyanines, homogeneous catalysts for oxidation of naphthalenes by peracetic acid, 1637
iron pentacarbonyl and hydrogen peroxide in pyridine-acetic acid for conversion of saturated hydrocarbons into their corresponding homolo-

gous carboxylic acids, 8137
pentacarbonyl iron, exposure of vinylcyclopropanes to – at elevated temperatures, study of steric and electronic effects, 357
[η^5-1-(phenylsulfonyl)cyclohexadienyl]iron(I) tricarbonyl hexafluorophosphate, reaction with hard and soft nucleophiles, synthetic applications, 5373
switching regiocontrol in 1-aryl-substituted cyclohexadienyliron complexes in a synth of lycoramine alkaloid, 6283
synth of 1,3-bis(diarylamino)benzenes as model precursors for 1D organic ferromagnetic metals: cyclic voltammetry and electron spin transient nutation spectroscopy to characterise the dications, 9207
tricarbonyl(triene)iron complexes, dihydroxylation/glycol cleavage of, synth of (dienal)Fe $(CO)_3$ complexes, 423

Isobenzofurans
1-dialkyloxyphosphorylisobenzofuran, synth by Lewis acid promoted reaction of *o*-phthalaldehyde with trialkyl phosphites, 5963
1,3-diphenyl –, rate constants for Diels-Alder reactions with substituted α- and β-fluoro styrenes and *p*-fluorostyrene, 7251
naphtho[1,2-c;5,6-c]difuran, analogue of isobenzofuran, synth from 2,6-dimethylnaphthalene, 8845
3-substituted 1(3*H*)-isobenzofuranones (phthalides), asymmetric synth by reduction of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, 2205

Isochromans
formation by palladium-catalyzed cyclization/allene insertion/anion capture cascades, 4221

Isocoumarins
fusarentin methyl ethers, 3-alkyl-3,4-dihydro-6,7,8-trioxy–, enantioselective synth using 3-acyl-2-oxazolidinone enolate alkylation, 8053

Isocyanates
acyl –, reaction with trimethylsilylketene, generation of 4-silyloxy-1,3-oxazin-6-ones and reaction with acetylenic esters and enamines, synth of 2-pyridones, 4973
by DMAP-catalysed reaction of amines with di-t-butyldicarbonate, subsequent trapping with alcohols, 5861
diisocyanates as scaffolds for combinatorial libraries, solid-phase synth of bis-ureas from polymer-supported diisocyanates, 8141
dithiolane-isocyanate iminium methylides, hetero-1,3-dipolar cycloaddition of, route to 1,3-oxazolidine- and thiazolidine-2-thiones, 711

Isocyanides
N-aryl –, radical addition of R_FI, synth of polyfluoroalkylimidoyl iodides, 7999
benzyl isocyanoacetate with a β-acetoxy-nitroalkane for pyrrole synth, 2325
3-benzyloxy-1-isocyanopropenes, synth and use as 3-hydroxypropanoyl anion equivalents, 2437
ethyl isocyanoacetate, reactions with nitroheterocycles, effect of base on product structure, 8391
1-isocyanocyclohexene in four-component condensations on polymer support, 1149
methyl isocyanoacetate, stereoselective cycloaddition to *N*-tosylaldimines, catalysis by Au(I) complex, formation of imidazolines, 4969
– as source and fate of imidoyl radicals, homolytic α-fragmentation of imines, 9337
substituted tosylmethyl isocyanides, synth *via* substituted tosylmethyl formamides, 8113
tosylmethyl – (TOSMIC) in synth of pyrrolo[1,2-*c*]pyrimidines, 4263

Isoindoles
1-benzenesulfonyl indole and 2-t-Boc –, synth of formal Diels-Alder adduct, 3487, corrig. 6959
cytochalasins, hexahydroisoindol-1-ones, synth of novel structures, 4113
pyrazino-, [1,2,5]thiadiazolo- and [1,2,5]selenadiazolo-fused –, formation from nitro-heterocycles and ethyl isocyanoacetate using phosphazene bases, 8391
RPR 111 905, a perhydro– deriv, synth, 8743

Isomerisation
of amino alkoxy oxiranes by treatment with butyllithium/diisopropylamine/potassiumt-butoxide mixture, synth of aminoalcohols, 5209
of electron deficient vinylcyclopropanes by thermal action of pentacarbonyl iron, synth of dienic esters, 357
of enol esters derived from cyclic 1,3-diketones catalysed by cyanide, assembly of triketide skeleton of the antibiotic pyoluteorin, 1007
of 2-(2-propenoxy)phenyllithium, 5-exo cyclisationto(2,3-dihydrobenzofuranyl)methyllithium followed by γ-elimination to give the lithium salt of 2-(cyclopropyl)phenol, 5435

Isomers
triacylglycerol positional isomers, structural analysis using atmospheric pressure chemical ionisation mass spectrometry, 8593

Isoprenoids
highly branched isoprenoid polyenes from the diatom *Haslea ostrearia*, characterisation, 4755

sapidolide A, tetrahydrofurano-lactone meroisoprenoid from tropical plant *Baccaurea sapida*, structure, 6791

Isoquinolines

cis- or *trans*-1,3-disubstituted tetrahydroisoquinolines, synth from oxazolidine, 4369

and 1-azetine derivs by irradiation of substituted α-dehydrophenylalanine *via* photoacetyl migration, 5917

1-benzyloxymethyl-2-tosyl-1,2-dihydro– deriv, synth of β-adrenergic receptor antagonist MY336-a precursor, 5329

(±)-cherylline and (±)-cherylline dimethylether, *Amaryllidaceae* tetrahydroisoquinoline alkaloids with biological activity, synth by cyclisation of trimethoxy-*o*-aroyldiphenylphosphoryl methylbenzamide, 3697

functionalised pyrrolo[2,1-*a*]isoquinolones, intermediates to *Erythrina* alkaloids, synth by sequential addition of organolithium reagents and *N*-acyliminium ion cyclisation of *N*-phenethylsuccinimide, 7841

fused tetrahydro– and isoquinolin-3-ones by Parham-type cyclization of imides, 6193

highly functionalised isoquinoline derivs, intermediates to manzamine A, synth by asymmetric Bradsher cycloaddition with 2,7-naphthyridinium salt, 7019

1,2,3,4-tetrahydro–, chiral synth by directed nucleophile addition to C-1 by N-linked prolinol moiety, 6161

1,2,3,4-tetrahydro–, formation by palladium-catalyzed cyclization/allene insertion/anion capture cascades, 4221

1,2,3,4-tetrahydro–, 1,1-disubstituted, convergent enantioselective synth of spiro-fused component of ecteinascidin 743, 7163

tetrahydroisoquinolines, synth on solid support, 4865

1,2,3,4-tetrahydroisoquinolines, synth *via* intramolecular cyclisation of *N*-trifluoroacylated phenethylamines, 5453

Isosteres

boronium ion analogue of tropane ring system (NH^+-BH_2^--NH^+ replacing CH-NH_2^+-CH), synth and calculations, 2729

γ-methyl-*E*-olefin Phe-Gly isosteres, synth by olefination on Boc-phenylalanine methyl ketone, conformational behaviour of four tetrapeptides containing the isostere, 703

see Carbohydrate analogues, Peptide analogues

α-substituted lactam dipeptide isostere, synth and derivatisation of, 4319

see also Peptide analogues

Isotope effects

kinetic – for the 1,3-CH(D) insertion reaction of t-butylchlorocarbene-d_6, 279

kinetic – to distinguish [3+2] *vs* [2+2] cycloaddition in dihydroxylation by OsO_4 catalyzed by bis-cinchonine-pyridazine, 4899

kinetic isotope effect in 1,2-H shift from tertiary C to carbene centre in cyclobutylfluorocarbene, 1929

remote ε-secondary isotope effect in the reaction of tetracyanoethylene with 2,5-dimethyl-2,4-hexadiene, mechanism, 3075

secondary – in dioxirane epoxidations of alkenes, non polar concerted mechanism, 5991

Isotope substitution

see Labelling

Isoxazoles

4-alkylideneisoxazol-5-ones, conversion into disubstituted alkynes by nucleophilic addition and $NaNO_2/FeSO_4$/AcOH degradation, 8735

5-aryl –, formation by thermolysis of benzyl cobaloximes, 5413

methoxymethylation of 3-hydroxy-5-phenylisoxazole, selective formation of *N*- or *O*-substituted products, synth of 3-hydroxy-5-phenylisoxazole-4-carbaldehyde, 6857

4-substituted aminoisoxazoles, synth by lithiation of 3-(Boc-amino)isoxazole and 5-(Boc-amino)isoxazole, 3339

variably substituted isoxazoles, solid supported synth in 4 steps including a Claisen condensation, α-alkylation and a cyclisation of a β-diketone with monosubstituted hydrazines, 1003

Isoxazolidines

benzopyrano-isoxazolidines, alkylation of, synth of cyclohexylidene alcohols, aldehydes and ketones and also fully reduced polypropionate units including (+)-siphonarienone, 1077, 1081

by asymmetric 1,3-dipolar cycloaddition of nitrones to olefins catalysed by chiral phosphine-palladium complexes, 5947

1,3-dipolar cycloaddition of *N*-benzyl-*C*-carboxynitrone to various olefins, effect of added triethylamine on regioselectivity, 6157

4-formyl–, base-promoted rearrangement to 2-iminooxetanes, 913

generation and trapping of nitrones and bisnitrones from oximes, synth of symmetrically linked bi-isoxazolidines, 4597

5-isoxazolidinyl thymine and cytosine as nucleo-

side analogues, enantioselective synth, 4877
Δ^4-isoxazolines and isoxazolidines, synth by cycloaddition of 1-benzylpiperazin-2-one nitrone with alkynes and alkenes, subsequent opening to 3-substituted piperazin-2-ones and 1,3-amino alcohols, 7339, 7343
spirocyclopropane –, rearrangement to deriv of (2*S*)-4-oxopipecolic acid, 4205
5-(1-thyminyl) –, and 2-benzyl analogue, 4′-aza-2′,3′-dideoxythymidines, synth from 1-vinylthymine, 1277

Isoxazolines
2-acylisoxazol-5-ones, conversion to the corresponding 2-substituted oxazoles by photolysis or pyrolysis, 675
DMP 754, non-peptide platelet GP IIb/IIIa antagonist, chiral synth, 4455
Δ^4-isoxazolines and isoxazolidines, synth by cycloaddition of 1-benzylpiperazin-2-one nitrone with alkynes and alkenes, subsequent opening to 3-substituted piperazin-2-ones and 1,3-amino alcohols, 7339, 7343

Ketals
see Acetals

Ketene acetals
5-azido-5-deoxyaldopentose ketene dithioacetal bis(sulfones), intramolecular 1,3-dipolar cycloaddition of in the synth of imino sugar analogues, 3925
hydroxy ketene acetals, synth by reaction of 2,2-di(ethoxy)vinyllithium with carbonyl compds, 5507

Ketenes
acylketene mediated lactonisation in synth of cyclic oligolides from 6-(ω-hydroxyalkyl)-dioxinone, 7683
cyclic ketene silyl acetals, photoreaction with 2-naphthaldehyde, synth of 2-siloxy-2-alkoxyoxetanes, 5901
cycloaddition of propargylthiodimethylsilane with ketene, synth of dimethylsilanethione ($Me_2Si=S$), 7017
diphenyl –, photoproducts from photocycloadduct with phenanthroquinone, 2317
fulveneketene acetal, [6+3] cycloaddition with 2-oxyallyl cation, synth of indane ring systems, 659
α-ketenylalkyl and αβ-unsaturated acyl radical intermediates in ring constructions, 271
N-phthalyl protected phenylglycine ketene, addition of *R* pantolactone to, synth of optically active *R* phenylglycine methyl ester hydrochloride, 379
trimethylsilylketene, reaction with acyl isocyanates, generation of 4-silyloxy-1,3-oxazin-6-ones and reaction with acetylenic esters and enamines, synth of 2-pyridones, 4973, 4977

Ketenimines
ketenimines, intramolecular [2+2] cycloaddition with imines, synth of azeto[2,1-*b*]quinazolines, 8945

Keto-acids/-esters
acyclic tetra-enyl β-keto ester, synth and radical polycyclization to form D-homosteroid skeleton, 7909
α-acylamino-β-keto-esters by acylation of alkyl hydrogen(acylamino)malonates *via* the $MgCl_2$/R_3N base system, 3303
dexamethasone in which C(17)OH-$COCH_2OH$ is replaced by C(17)H-$COCO_2H$ on reaction with DMF-DMA, 5365
diastereoselective reduction of β-ketoesters by baker's yeast in petrol, 1699
ethyl 3-oxo-4-(phenylthio)butyrate, baker's yeast reduction, enantioselective *N*-methoxy-β-lactam synth, 7533
α-fluoro β-keto esters, synth by acylation of diethyl(ethoxycarbonyl)fluoromethylphosphonate using magnesium chloride-triethylamine, 653
7-hydroxy-4-oxooct-2-enoate esters, synth from t-butyl acetoacetate, synth of precursor to (*R,R*)-(-)-pyrenophorin, 2381
α-keto esters, reactions with *N*-acyloxazolidine enolates, synth of 2-hydroxy-2,3-disubstituted succinate derivs, 8263
α-ketoesters bearing 5(*N*-methylbenzoylamino)-2,2,6,6-tetramethylheptan-3-ol as a chiral auxiliary, reduction of, synth of α-hydroxy carboxylic acids, 1863
β-ketoesters, Michael addition to enones and α,β-unsaturated aldehydes catalysed by ytterbium triflate, synth of corresponding 1,4-adducts, 1879
methyl 9-ketododecanoate, reductive amination of, synth of 9-propyl-10-azacyclododecan-12-olide, component of defensive secretion of Mexican bean beetle, 2141
methyl6-hydroxy-10-isopropenyl3-methyl(-1,3-dimethyl)-2-oxotricyclo[5.3.1.$0^{3,8}$]undec-5-ene-5-carboxylate, synth, 8061
α-phenylseleno-γ-keto esters and γ-butyrolactones, synth by reaction of α-chloro-α-phenylselenoesters with silyl enol ethers, 9173

N-protected γ-amino-β-keto-esters from urethane *N*-carboxyanhydrides by reaction with lithium enolate of ethyl acetate, 8489
racemic β-keto esters, kinetic resolution of in synth of C1-C9 segment of bryostatin, 1767
transesterification using sulfated SnO_2 as catalyst, 233

Ketols
bis-ketol phosphate triesters, rate of initial ketol group hydrolysis, 1169
α-ketols by osmium-catalysed oxidation of olefins and dihydroxylation of allenes, 3333, 3335

Ketones
α-tetralones, conversion into 1,2-dihydronaphthalenes by hydride donation from pentane-2,4-diols in presence of *p*-TSA, 1941
acetalization and thioacetalization using kaolinitic clay as catalyst, 4605
3-acetyl-5-hexyn-2-one, reaction with aryl iodides under carbon monoxide, synth of various 2,3,5-trisubstituted furans depending on the alkyne/aryl iodide ratio, 6811
aldehydes and –, synth using *N*-methoxy-amides on polymer support, 1161
aliphatic –, chiral reduction by lithium *B*-[2-(2-dimethylaminoethyl)isoapocampheyl]-9-borabicyclo[3.3.1]nonyl hydride, 3791
α-alkoxymethyl ketones, *anti*-aldol reactions of, key step in synth of (+)-restricticin antifungal agent, 8243
alkyl aryl ketones, enantioselective transfer hydrogenation of catalysed by ruthenium complexes of chiral phosphinooxazolines, 1381
alkynyl –, synth by Cu(I)-catalyzed acylation of terminal alkynes, 7323
alkynylation of, synth and reactivity of 4-pentynones, synth of substituted furans, 3387
allylation of using the allylic tin(IV)-tin(II) chloride-acetonitrile system, 5951
β-amino-α,α-difluoroketones, synth by reactions of 1,1-difluorovinyl methyl ethers with *N*-acyliminium salts derived from reaction of biscarbamates with trifluoromethanesulfonic anhydride, 1061, corrig. 2515
benzophenones by electron-transfer induced electrocycloreversion of benzocyclobutenols *via* *o*-quinodimethane intermediates, 5547
by oxidation of alcohols, loss of stereochemical integrity at a neighbouring quaternary carbon during oxidation of highly substituted cyclohexanol, 1721
by PET-oxidative cyclisation of unsaturated silyl enol ethers, regioselective control by solvent effects, 7349
cathodic coupling of – with 3- and 2-(trimethylsilyl)allyl alcohols, synth of trimethylsilyl substituted 1,3-diols and homoallylic alcohols respectively, 6737
Cd metal for synth of βγ-unsaturated ketones from allylic bromides and acid chlorides, 9087
chiral – from samarium enolates, catalytic enantioselective protonation using C_2-symmetric chiral diol, 2805
chiral reduction of – using acetone powder of *Geotrichum candidum* and a 2-alkanol as reductant, 1629
conversion into sec. amines by reductive alkylation of *o*-nitroanilines, 6045
cyclopropyl –, stereochemistry of nucleophilic addition, 221
diacyl aromatics, chiral reduction to C_2-symmetric diols by chloro(diisopinocampheyl)-borane, 3795
1,3-diarylpropan-1-ones by reaction of *N,N*-dimethylacrylamide/Tf_2O complex with electron-rich aromatic compounds, 4199
diethyl ketovinylphosphonate, Diels-Alder reactions of with cyclopentadiene and *E*-1-acetoxy-1,3-butadiene or furan, 2149, 2153
difluoromethyl ketones, synth by reaction of aliphatic and arylic aldehydes with the lithium salt of diethyl difluoromethylphosphonate as a difluoromethyl carrier, 4707, 4711
1,2-diketones, Horner-Wadsworth-Emmons olefination of, synth of 4-hydroxy-cyclopent-2-en-1-ones, 1899
direct α-fluorination of – using 1-fluoro-4-hydroxy-1,4-diazoniabicyclo[2.2.2]octane bistetrafluoroborate, 3591
direct C-acylation of phenols by acids using catalytic $Hf(OTf)_4$, 4183
disymmetric cyclohexylidene alcohols, aldehydes and ketones by asymmetric Horner-Emmons reaction of the phosphonate derived from a chiral benzopyrano-isoxazolidine, 1077
enaminoketones by irradiation of 1-aroyl-2-methylenepyrrolidines, 7749
enaminoketones, synth from condensation of bulky amines with ethyl acetoacetate or 2,4-pentanedione, activation by high pressure or catalysis by ytterbium triflate, 3691
enantioselective reduction of – by borane catalysed by oxazaphospholidine oxides, 39
enantioselective reduction of 2-aroyl-pyridines

and *N*-allylpyridinium triflates and benzophenones using oxazaborolidine-catalyzed catecholborane, 5675
enantioselective reduction by borane with chiral phosphinamide catalysts, 2853
α,β-epoxy ketones, photoinduced electron transferwith2-phenyl-*N,N*-dimethylbenzimidazoline, synth of corresponding aldols, effect of water on reaction, 7079
fluorinated ketones, energetics of hydrate and hemiketal formation for, 9165
2-fluorosilylacetophenones by treatment of 2-silyl benzamides with LDA driven by CIPE-facilitated α-silyl carbanion formation and rearrangement, 2915
from deblocking of dithioacetals and oxathioacetals using periodic acid, 4331
α-halo aryl ketone, photorearrangement to 1-methyl-1-(*p*-tolyl)acetic acid, key step in synth of α-cuparenone terpene, 2629
hexachloroacetone, reaction with 1,2-diamines, 5265
hydrotalcite catalysis of m-CPBA Baeyer-Villiger oxidation of −, 4555
α-hydroxy arylketones, enzymatic synth as intermediates to Sch 42427/SM 9164, chiral azole antifungals, 611
β-hydroxy ketones and aldehydes, allylboration of with allylboronic acid, synth of *anti*-1,3-diols, 2181
2-hydroxy ketones by dioxirane oxidation of *O*-isopropylidene derivs of diols, 115
2-(*R*)- and 2-(*S*)-hydroxy-1-phenylbutan-1-ones, synth from propanal using dithiane oxide as building block, 8929
β-hydroxyketone, transfer of an alkyl group from organocerium compds to the carbonylic function of, synth of alkyl substituted 1,3-diols, 2293
α-keto amides, dimerisation using samarium diiodide, synth of tartaric amides, 7755
3-ketoacrylates, remote asymmetric induction in organocopper conjugate additions to, 4293
ketone lithium enolates, Michael reactions of using a chiral amine ligand, 6343
ketones and aldehydes by oxidation of primary and secondary alcohols with acyl nitrates supported on montmorillonite or chrysotile, 5029
ketones and amides, fluorination or hydroxylation of non activated C-H bonds in − using CCl_4 or NBS in superacids, 2967
β-ketophosphine oxides, $TiCl_4$ mediated $LiBH_4$ reduction of, synth of *anti*-β-hydroxyphosphine oxides, 7421
4-keto-4,5,6,7-tetrahydroindoles, synth by intramolecular 1,3-dipolar cycloaddition, 2887
β-methoxyvinyl trichloromethyl ketones derived from acetals, reaction with *O*-phenylenediamine, synth of 2-trichloromethyl-4-aryl-3*H*-1,5-benzodiazepines, 9155
N,N-dimethylamino α,α-difluoroketones, substitution reaction with tetramethylammonium salts of imidazole, synth of 5-imidazol-1-yl α,α-difluoroketones, 5119
optically active cyclopropyl ketones, synth by intramolecular acylation of γ-benzyloxy phosphine oxides with LDA, 1501
optically active ketones by 1,4-addition of lithium dialkyl cuprates to half esters of 1,1′-binaphthalene-8,8′-diol followed by formal 1,2-addition, 7373
oxidation of cyclopropyl methylene groups to cyclopropyl ketones by RuO_4, 2425
β-oxygenated methyl ketones, boron-mediated aldol reactions with achiral aldehydes: reductions of the resulting aldol products provides 1,3-polyols, 8585
photolabile alkoxy benzoin protecting groups, synth of by Corey-Seebach dithiane addition, 307
prochiral ketones, aldol reactions with methyl isocyanoacetate, synth of methyl (4*R*,5*R*)-4,5-dihydro-5,5-(disubstituted)-4-oxazolecarboxylates, 7845
reaction of acyl tributyl phosphonium salts with Grignard reagents, synth of −, 5381
resin bound 3-hydroxyacetophenone, condensation with aryl aldehydes followed by reaction with azomethine ylid, synth of pyrrolidines, 9157
ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
steroid 3-ketones, conversion to 3-enol sulfonates using 3-oxa-octafluoropentanosulfonyl fluoride, subsequent conversion to 3-carboxyl unsaturated steroids, 8553
δ-(sulfonylamino)-α-epoxy ketones, conversion to bicyclic ketopyrroles *via* intramolecular conjugate-addition to azoene intermediates, synth of bicyclic core of the 1-azafulvene roseophilin, 2545
synth by catalytic O_2 oxidation of alkanes using 18-crown-6/$CuCl_2$/acetaldehyde, 1633
transfer hydrogenation by triethylammonium hypophosphite and Ru(II) catalysts, diastereoselection, 6599

trifluoroacetylation of anisole and other aryl ethers using TFAA and $CoCl_2$, synth of trifluoro-methoxy-acetophenones, 4511
trimethylsilylcyanation of catalysed by diorganotin dichlorides, 2525
1,4,4-tri(*p*-methoxyphenyl)-3-buten-1-one from photo-fragmentation of 3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane, 8181
tripeptide α′,β′-epoxyketones as inhibitors of the chymotrypsin-like activity of porcine endothelial cell derived proteasome, synth from Boc-[*S*]-phenylalanine, 1343
α,β-unsaturated ketones by zinc-mediated allylation of acid chlorides, 1109
α,β-unsaturated ketones, conjugate addition of diorganozinc catalysed by a copper(I)-sulfonamide combined system, synth of zinc enolates, 5141
αβ-unsaturated ketones and nitriles, reduction by iodotrichlorosilane, 2297
α,β-unsaturated ketones, regioselective reduction to the corresponding allylic alcohols in aqueous media containing glycosidic surfactants or amphiphilic carbohydrates, 53
unsymmetrical ketones by stepwise hydroboration of alkenes using (±)-isopinocampheyldichloroborane, 1763
unsymmetrical ketones, synth *via* stepwise hydroboration of alkenes using (±)-isopinocampheyldichloroborane, 1763
vinylketones, 1,4-addition of aldehydes to, synth of 5-ketoaldehydes, 5139
see also the individual Cyclic ketones, Chalcones, Dienones, Enones

Kharasch reactions
allylic acyloxylation by t-butyl perbenzoate, $Cu(OTf)_2$/DBN or DBU as catalyst, 8435

Kinetics
cyclization rates in 5-(bromoalkyl)-5*H*-dibenzo-[*a*,*d*]cycloheptene Bu_3SnH/AIBN reactions, 3845
determination of rates of nucleophilic capture of the phenylcyclopropane cation radical, 1841
dynamic kinetic resolution of 5-hydroxy-2(5*H*)-furanones catalysed by lipase PS, 4759
dynamic kinetic resolution of allyl acetates by enzymatic hydrolysis to the corresponding allyl alcohols, 1859
effect of base on acceleration of the rate of Suzuki coupling of sterically bulky boronic acid with halopyridines, 1043
H/D exchange in malonic acid, pyruvic acid and acetaldehyde, catalysis by heptakis-6-amino-6-deoxy-β-cyclodextrin, 8963
high pressure kinetics to study the $AlCl_3$ catalysed addition of methyl propynoate to cyclopentene and cyclohexene, 1417
hydrolysis of bis-ketol phosphate triesters, 1169
investigation of proximity effect induced on a carboxylate by a urea binding site positioned near an electrophilic centre, 101
kinetic isotope effects to distinguish [3+2] *vs* [2+2] cycloaddition in dihydroxylation by OsO_4 catalyzed by bis-cinchonine-pyridazine, 4899
kinetic resolution of *sec*-alcohols using axially chiral twisted amides, 4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, 6777
kinetic versus thermodynamic control of thermal rearrangement of 7-vinylnorcaradienes, 7761
olefinic fluorine-substituted hex-5-enyl radical cyclizations, 5321
photo-oxygenation of trisubstituted alkenes, rate-determining formation of perepoxide, 4105
polar substituent and solvent effects on the kinetics of radical reactions with thiols, 5845
rate acceleration of cation radical deazetation of 2,3-diazabicyclo[2.2.2]oct-2-enes, phenyl substitution effects on, 4377
rates of solvolysis of 2-thioxo bridgehead compds as compared with their 2-oxo homologues, evidence for marked π-conjugation in 2-thioxo carbocation, 2241
of the reaction of phenylchlorocarbene with 3-ethyl-1-azabicyclo[1.1.0]-butane, 5849
regenerating method of NADPH using formate dehydrogenase, 1377
substituted α- and β-fluoro styrenes and *p*-fluorostyrene, rate constants for Diels-Alder reactions with diphenylisobenzofuran, 7251
trapping of perepoxide intermediate formed in the photooxidation of adamantylideneadamantane by sulfenate and sulfinate esters, 2911
versus thermodynamic control in Michael reaction of azoles with α,β-unsaturated nitriles and esters catalysed by bicyclic guanidines, 4423

Knoevenagel reactions
condensation of carbonyl compds on malononitrile in dry media under microwave irradiation and catalysed by silica gel, 1113

Labelling
andrastins A-C, metabolites of *Penicillium* sp. FO-3929, culture enriched in acetate-$^{13}C_2$, NMR, 1265

biotin and fluorescein labelling of biomolecules by active esters of 1-phenylpyrazolin-5-ones, 4313
deuterium – of *meso*-2,3-butanediol, group discrimination in diol dehydratase reaction, 4247
deuterium – of trimethylethylenes, kinetics of photo-oxidation, 4105
deuterium exchange in aromatic hydrocarbons and heterocycles using supercritical D_2O/NaOD, 3445
[3-^{13}C]-3,4-dimethyl-4-homoadamantyl *p*-nitrobenzoate, solvolysis of, comparison of the barriers to Wagner-Meerwein rearrangement of the secondary and tertiary 4-homoadamantyl cations, 1035
EDTA and DTPA analogues of dipalmitoylphosphatidylethanolamine as lipophilic chelating agents for metal labelling of LDL, 4685
glycerol-deuteriated ether phospholipids, synth, 5705
H/D exchange in malonic acid, pyruvic acid and acetaldehyde, catalysis by heptakis-6-amino-6-deoxy-β-cyclodextrin, 8963
^{13}C-labelled glucose incorporation into isopentenyl diphosphate in *Streptomyces aeriouvifer*, mevalonate and non-mevalonate pathways to menaquinone and naphterpin, 7979
radical alkynylation using alkynyl trifluoromethyl sulfones, ^{13}C – in acetylenic group, 5269
reduction by-products of Pd-catalyzed coupling of aryl bromides and amines, D– study, 7181
solvent-induced control of ultrasonic deuterium labelling, 6231
tritiated alkenes by conversion of the trisylhydrazone deriv of a ketone to the vinyllithium intermediate which could be quenched with tritiated water, 2923
tritium and photoaffinity –, phosphatidylinositol 3,4-bisphosphate, synth of a tritiated benzophenone-linked analogue, 9017
(3*R*)-[4,4,4-D_3]-L-valine, [^{15}N]-L-isoleucine and [^{15}N]-*allo*-isoleucine, synth from homochiral 2-alkylated carboxylic acids, 1517

Lactams

7,7-dialkyl 3-amino-2-oxohexahydroazepine-1-acetic esters, synth, 8985
N-hydroxyethyl lactam, ring expansion of, synth of 9-propyl-10-azacyclododecan-12-olide, component of defensive secretion of Mexican bean beetle, 2145
intramolecular addition of carbenoid to – carbonyl O, formation of 10-membered bicyclic imino-ether, 8035
γ-lactams related to penicillins and cephalosporins, synth from thiazine, 5601
γ-lactams, synth by radical cyclisation of *N*-ethenyl trichloroacetamides when exposed to nickel powder and acetic acid in 2-propanol, 1397
macrobicyclic ligand with six amide receptor sites, nitrilotriacetic acid-*o*-phenylenediamine condensation product, 3579
tetrabenzylgluconolactam, starting material for formal synth of (+)-castanospermine, 547
tricyclic –, synth by intramolecular Schmidt reactions in an approach to synth of sparteine, 1531
δ-valerolactam deriv of C_{60} by hetero Diels-Alder reactions with 1,3-bis(t-butyldimethylsilyloxy)-2-aza-1,3-butadiene, 9211
for β-lactams *see* Azetidinones

Lactones

agardhilactone, a novel oxylipin from the marine red alga *Agardhiella subulata*, isolation and characterisation, 4635
alduronic acid –, cleavage of hexuronic and penturonic acids by $PhI(OAc)_2/I_2$, 1687
α-allyl-α-carboxy-γ-lactones, base-promoted cyclization to cyclopentenones *vs* 1,2-ester group migration, effect of substituents, 3199
annulated lactones, synth involving reduction of the carbonyl group of organomercurials providing the mercury is protected by methylation, 5585
4-aryl-γ-butyrolactones, -furan-2(5*H*)-ones and -5-alkoxyfuran-2(5*H*)-ones, synth *via* Heck reaction of arenediazonium salts with 2,5-dihydrofuran, 8625
γ-aryl-β-iodo –, synth *via* tributylstannyl 4-tributylstannylbut-3-enoate, 7507
β– from *N*-tritylated serine and threonine, use of BOP, 4237
benzo-annulated enol lactones, synth by cyclisation of the potassium carboxylates of pentynoic acids 3- or 5-substituted with an iodo-aryl moiety, 1429
bicyclic – formed by intramolecular cyclizations of 3-arenesulfonyl cycloalkanol carbonates, 6827
bromolactonization using $CuBr_2$ on alumina, 157
γ-butyrolactones, formation by ozonolysis of 2-tributylstannyl tetrahydrofurans, 9115
γ-butyrolactones, synth by reaction of α-chloro-α-phenylselenoesters with silyl enol ethers, 9173
canadensolide, synth of precursor from L-arabin-

ose, 8641
(*R*)- and (*S*)-β-carboxymethyl-β-methyl-β-lactones, synth by desymmetrisation of HMGA anhydride, use as reagents for prep of HMGA, 2275
cerpegin, 2-pyridone γ-lactone from *Ceropegia juncea*, short synth, 8733
constanolactone E, marine eicosanoid from red alga *Constantinea simplex*, synth from allyl phenyl sulfone and chiral epoxymesylate, 7407
2-deoxy-2-fluoro-γ-aldonolactones, asymmetric synth of and conversion to 2-deoxy-2-fluoropentoses, 4345
γ,γ-dimethyl-γ-butyrolactones, synth by iodine catalysed lactonisation of γ-methyl-γ,δ-pentenoic acids, 1441
diphenylphosphinoyl – in the control of remote stereochemistry, 2105
fused α-methylene-γ-butyrolactones, synth by indium-mediated carbocyclizations, 5341
2′,3′-fused γ-butyrolactone-nucleosides, synth and coupling with 5′-amino-nucleosides to give amide-linked nucleotide-dimer analogues, 3921
cis- and *trans*-fused lactones by palladium(II)-catalysed carbonylation of organomercurials in the presence of *p*-benzoquinone, 1125
(+)-goniobutenolide A, γ-alkylidenebutenolide, synth by Pd-catalyzed ene-yne coupling and lactonization cascade, 9041
(+)-goniodiol, cytotoxic styryl lactone isolated from several *Goniothalamus* species, total synth from α-(α′-alkoxyallenic) alcohol, 371
(+)-goniofufurone and goniobutenolides A and B, cytotoxic styryl lactones from stem bark of *Goniothalamus giganteus*, synth from (*R*)-(−)-mandelic acid *via* a β-hydroxy sulfone, 4373
L-homoserine –, conversion into homochiral β-aminoacids 3165
hydrolysis of 2-hydroxymethyl-1-phenylcyclopropane-1-carboxylic acid – by fungal cell cultures, 4519
(*R*)-(+)-lasiodiplodin and de-*O*-methyl lasiodiplodin, plant growth inhibitors from fungus *Botrysdiplodia theobromae*, synth by ring-closing metathesis, 7005
medium-ring –, reaction with unstabilized phosphonium ylids, formation of olefinic alcohols, 3853
4-, 5-, 6- and 7-membered –, synth from acetylenic alcohols or their silyl ethers and Fischer carbene $(OC)_5Cr{=}C(OEt)Me$, (+)-blastmycinone and (+)-antimycinone synth, 6165
5-menthyloxybutenolides, enantioselective conversion into 2-alkyl-1,4-butanediols, 2429
(+)-octalactin A, cytotoxic lactone natural product, synth of two key intermediates to, 5049
3-oxoacyl-L-homoserinelactones and related bacterial autoinducers, prep by condensation of 3-oxohexanoic acid with L-homoserinelactone using hydroxybenzotriazole and dicyclohexylcarbodiimide, 1883
Pd(0)-catalysed lactone migration in a bicyclo[2.2.2]oct-5-en-2-one derived lactone, synth of *cis*-fused hydrobenzofurans, 7809
(+)- and (-)-phaseolinic acid, 3-carboxy-2-methyl-4-pentylbutanolide, enantioselective synth, 8297
podophyllotoxin, aryltetralin lactone, synth by conjugate addition-alkylation of 5*H*-furan-2-one followed by cyclisation and epimerisation, 2663
β-propiolactones, synth from homochiral aldehydes amd Li enolates of thiolesters, stereocontrol, 245
sapidolide A, tetrahydrofurano-lactone meroisoprenoid from tropical *Baccaurea sapida*, structure, 6791
syringolide 2, butanolide elicitor metabolite of *Pseudomonas syringae* pv. *tomato*, synth from xylulose, 3557
α,β-unsaturated γ-methyl-γ-lactone of the Annonaceous acetogenins, absolute configration by enzymatic method, 7043
see also Furanones, Macrolides

Lactonisation
iodine catalysed – of γ-methyl-γ,δ-pentenoic acids, synth of γ,γ-dimethyl-γ-butyrolactones, 1441

Lanthanides
asymmetric Henry (nitroaldol) reactions of α,α-difluoroaldehydes catalyzed by lanthanide lithium BINOL complexes, 9081
effect of Eu(III) salt on the regioselective intramolecular photocycloaddition of 1-cyano-2-(2-oxa-4-alkenyl)naphthalenes, 7775
La-Na-BINOL complex (LSB) as catalyst for asymmetric Michael reactions, 5561
lanthanide triflate as catalyst for Mannich-type reaction of *N*-(α-aminoalkyl)benzotriazoles with silyl enolates, synth of the corresponding β-amino ketone or ester derivs, 3731
lanthanide(III) trifluoromethanesulfonates as catalysts for aqueous aza Diels-Alder reactions of an aldehyde and an amine hydrochloride,

2169
lanthanum perchlorate and tin(II) triflate as promoters of the β-selective glycosylation with α-mannosyl fluorides, 7797
4-phenylethynylpyridine-2,6-dicarboxylate forms highly fluorescent beads when attached to polymer and complexed with Eu^{3+}, 6483
samarium(III), complexation with tris(carboxyethyl)pentaerythritol derivatives, 1237
Ln(III) triflates as catalysts for condensation of indoles with aldehydes in water, 4467
$Yb(SPh)_2$, formation and use in pinacol reaction, 3465
ytterbium Lewis acid as catalyst for Diels-Alder reactions of imines with alkenes, 7357
ytterbium triflate catalysed condensation of bulky amines with ethyl acetoacetate or 2,4-pentanedione, synth of enaminoketones, 3691
ytterbium triflate, catalyst in diastereoselective addition of silyl enolates to imines derived from (*S*)-valine methyl ester, 1691
ytterbium(III) trifluoromethanesulfonate as catalyst for high pressure reaction of epoxides with indole, application to synth of (+)-diolmycin A2, 3727
see also Cerium, Samarium, and compds

Leukotrienes
Ro24-5913, an *N*-succinyl-3-(2-thiazolethenyl)-anilide leukotriene D_4 antagonist, synth *via* (*E*)-4-cyclopentyl-2-[2-(3-nitrophenyl)ethenyl]-thiazole, 5445

Lignans
(±)-licarin B and eupomatenoids-1 and -12, benzofuranoid neolignans, synth by reactions of styrenes with *N*-phenylsulfonyl-1,4-benzoquinone monoimines followed by conversion of *N*-phenylsulfonyl moiety to propenyl, 6969
podophyllotoxin, synth by conjugate addition-alkylation of 5*H*-furan-2-one followed by cyclisation and epimerisation, 2663
xanthonolignoid 5′-demethoxycadensin, INEPT spectroscopy to determine orientation of the substituents on the 1,4-dioxane ring of, 2643

Linear free energy relations
Hammett plot for dimerization of phosphate diaryl esters, 1925
nonlinear optical chromophores possessing enhanced thermal stability, synth, 7055
pancreatic cholesterol esterase, inhibition by 4-nitrophenyl *N*-alkyl carbamates, 193
steric parameters for amines estimated by MOPAC, alkylation of amines, 4617
structure-reactivity relationships in solid state photochemistry of 2,4,6-triisopropylthiobenzophenone, C=O...H versus C=S...H abstraction geometry, 2125

Lipids
diacylglycerols containing disulfide links between chains, 5769
5,6-difluoroarachidonic acid, potential inhibitor of 5-lipoxygenase, synth, 4941
2,3-diphytanoxypropanamine, an archaebacterial lipid model, attachment of a peptide containing the cell adhesion sequence Arg-Gly-Asp-Ser to, 7391
D-*erythro*- and L-*threo*-sphingosine, synth by ring-opening of *N*-sulfinylaziridine 2-carboxylic acid, 4349
flavolipin, immunoactivating bacterial –, synth of all stereoisomers of proposed structure, but none identical with the natural product, 3875
2-(2,3,7,13-tetrahydroxyoctadecanoylamino)ethanesulfonic acid, framework of taurolipid B isolated from fresh-water protozoan *Tetrahymena thermophila*, absolute configuration, 6347
see also Cerebrosides, Glycolipids, Phospholipids

Liquid crystals
calamitic porphyrins with lateral aromatic branches, atropisomerism, 7641

Lithiation
of allyl chlorides by lithium diisopropylamide, synth of chlorocinnamyllithium and benzothiazolylchloroallyllithium which react with carbonyl compds to form styryl oxiranes and benzothiazolylvinyl oxiranes, 4777, 4781
of 3-(Boc-amino)isoxazole and 5-(Boc-amino)-isoxazole, synth of 4-substituted amino-isoxazoles, 3339
α-arylvinyl carbamates, tandem carbolithiation-α-alkylation and 1,2-Wittig rearrangements, 6061
of *N*-(chloromethyloxycarbonyl)pyrrolidine, a source of the $HOCH_2^-$ synthon, 5593
of 2,6-dibromopyridine with butyllithium, synth of 2-bromo-6-lithiopyridine, application to synth of 5-lipoxygenase inhibitor L-739,010, 2537
of 2,6-dichloroimidazo[1,2-*a*]pyridine by LiTMP and reaction with protected ribonolactone, synth of 5-*C*-riboside, 2365
dilithiated (*E*)-*N*-isobutyl-4-tosyl-2-butenamide, allyl sulfone dianion for the regiospecific γ-functionalisation of crotonamide dianion, synth, 4787
N-diphenylmethylidene (3-pyridylmethyl)amine,

–, alkylation in synth of minor tobacco alkaloids, 1137
directed dilithiation of diaryl compds, key step in synth of clopipazan, a tricyclic pharmacologically active compd, 5073
1,3-diselenanes, reaction with organolithiums, H/Li or Se/Li exchange depending on substitution, 8011, 8015
intermolecular and intramolecular carbolithiation of silylated enynes, synth of propargylic-allenes and 4- and 5-membered rings respectively, 6689, 6693
lithiation of *o*-, *m*- and *p*-chloro- and bromobenzotrifluorides, dependence of metalation site on reagent, 2767
ortho lithiation technology using alkyl benzenesulfonates to prepare a series of 2,6-disubstituted benzenesulfonates, benzenesulfonic acids and benzenesulfonyl chlorides, 3639
of pyrazines, 2,6-disubstituted, using Li diisopropylamide or tetramethylpiperidide in THF, 5325
regioselective – of chloro- and bromo-fluoroarenes, 6551
of substituted 2-n-alkyl *N,N*-diethylbenzamides, synth of a mixture of *ortho*- and adjacent-benzylic alkylated products, 1335

Lithium and compds

alkenyl lithiums, diastereoselective addition to aldehydes, synth of taxol A-ring components, 9139
alkynyllithium reagents, reaction with acetyl-(triisopropyl)stannane, synth of triisopropyl α-(trimethylsilyloxy)propargyl stannanes, 437
aryllithiums, reaction with β-[[(trifluoromethylsulfonyl)oxy]vinyl](phenyl)-iodonium triflates, synth of (aryl)(phenyl)iodonium triflates, 3721
o-carboranyllithium reagents, reaction with functionalised alkyl halides, synth of a variety of *o*-carborane derivs, 3383
chiral β-lithio enol ethers, synth, alkylation and acylation, 7255
chlorocinnamyllithium and benzothiazolylchloroallyllithium, synth and reaction with carbonyl compds to form styryl oxiranes and benzothiazolylvinyl oxiranes, 4777, 4781
2,2-diethoxyvinyl-Li, synthetic equivalent of ethyl acetate anion, 2771
2,2-di(ethoxy)vinyllithium, reaction with carbonyl compds, synth of β-hydroxy esters, conjugated esters or hydroxy ketene acetals, 5507
lithiated phosphine oxides, instability of configuration using Hoffmann test, 4271
lithio-bisdiethylaminophosphine borane complex, alkylation, synthetic equivalent of $Cl_2PBH_3^-$, synth of functionalized phosphines and diphosphines, 6099
O-lithiomethyl sugar derivs, generation, use, 4211
lithium amidotrihydroborate, synth and use as a reducing agent, 3623
lithium carbenoid reagent RCH(OMEM)CFBrLi, generation and reaction with electrophiles, 7387
lithium cobalt-bisdicarbollide, catalyst for allylic substitution reactions, 8707
lithium derivs of chiral phosphine oxides, alkylation, hydroxy-alkylation and silylation of, 7461, 7465
lithium dialkyl cuprates, addition to half esters of 1,1'-binaphthalene-8,8'-diol followed by formal 1,2-addition, synth of optically active ketones, 7373
lithium fluorenide, reaction with [60]fullerene, synth of a 1,4-adduct of [60]fullerene, 7061
lithium metal, reaction with α,β-bistrimethylsilylstyrene, dianion formation and Schlenk dimerization, NMR study, 8719, 8723
lithium powder reaction with *N*-(chloromethyloxycarbonyl)pyrrolidine, a source of the $HOCH_2^-$ synthon, synth of functionalised carbamates, 5593
lithium powder reaction with *O*-t-butyl-*N*-(chloromethyl)-*N*-methyl carbamate as a source of the $MeNHCH_2^-$ synthon, synth of functionalised carbamates and subsequently to 1,2-amino-alcohols, 5597
lithium trifluoromethanesulfonate as catalyst for aminolysis of oxiranes, 7715
organolithium reagents, reaction with *N*-(9-phenylfluoren-9-yl)-alanine oxazolidinone, synth of α-amino ketones and alcohols, 3403
phenyldimethylsilyllithium, assay, problems and their resolution arising with the double titration method, 9395
phenyllithium, reaction with perfluoroalkylated dithioketals, oxidation of the resulting vinyl sulfides and further reaction with phenyllithium yields perfluoroalkylated triphenylethylenes, 5905, corrig. 7665
2-(2-propenoxy)phenyllithium, 5-exo cyclisation to (2,3-dihydrobenzofuranyl)methyllithium followed by γ-elimination to give the lithium salt of 2-(cyclopropyl)phenol, 5435
synth of tribactam precursor by cycloaddition of t-butyl lithioacetate to a trimethylsilylimine, 2467
thiophilic addition of organolithiums to aliphatic

α-methylthio-sulfines, formation of dithioacetal *S*-oxides, 4507

Luminescence

3-(4-acyl-3-hydroxyphenyl)-1,2-dioxetanes as chemiluminescent substrates with high efficiency in an aqueous system, 8535

3-alkoxymethyl-4-3-t-butyl-4-methoxy-1,2-dioxetanes as a chemiluminescent substrate with short half-life emission, 5939

luminescent 10-carboxymethylacridinium derivs: synth of an acridinium ester with an antibody binding group at N-10 on the acridine ring and alkylation of N-10 using a trifluoromethanesulfonate ester, 8519

see also Fluorescence

McMurry reactions

calix[4]arene derivs with highly strained structures by intramolecular reductive dimerisation of appropriate formyl groups in the presence of low-valent titanium agents, 645

Macrocycles

1,4-alternate calix[4]arene-bis-(hexaoxa-diazacryptand), and analogue doubly capped with diaza-18-crown-6 rings, synth, complexation studies, 8747

N^4-(4-aminobenzyl) 1,4,7,10-tetraazacyclododecane, 1,4,8,11-tetraazacyclotetradecane N^1,N^2,N^3-triacetic acids, synth, 7515

(+)-cavicularin, optically active cyclic bibenzyldihydrophenanthrene deriv from the liverwort *Cavicularia densa* Steph., structure, 4745

cyclic hydropyran oligolides, synth by macrolactonisation of tris(hydropyran) hydroxy acids or by cyclooligomerisation of bis- or tris-(hydropyran) seco acids, 343

cyclodidemnamide, 21-membered cyclopeptide containing thiazole, thiazoline, oxazoline and pyrrolidine rings, synth, 9111

cyclophane belts, synth of [8]cyclacene precursor by double Diels-Alder reaction, 1983

diacylglycerols containing disulfide links between chains, 5769

dianion of 3-oxo-13-tetradecanolide, alkylation of, 5069

disymmetrical coronand containing two different subunits, synth and cation complexing properties, 5499

dye-bound pyrrolidine with two macrocyclic side arms at positions 3 and 4, sequence-selective receptors for peptides, 8699

linear quinine oligomers, synth and kinetic cyclisation of, 6013

macrobicyclic ligand with six amide receptor sites, nitrilotriacetic acid-*o*-phenylenediamine condensation product, 3579

maleimide-assisted on-resin peptide macrocyclization, 5665

72-membered macrocyclic phospholipid which is a unimolecular version of the two-molecule unit spanning a membrane bilayer, synth, 323

modelling and synth of molecular systems ("mappemondes") from calix[4]-bis-crown, 3325

orienticin C, synth of the M(2-4) macrocyclic subunit from a tetrapeptide presursor by intramolecular nucleophilic aromatic substitution, 3251

phlorins by *meso*-alkylation and reduction of *meso*-tetraphenyl- and octaalkylporphyrins, 7699

pithomycolide, cyclic depsipeptide, synth, 6479

polyaza macrocycles containing the piperazine ring as a semi-flexible moiety, synth from (2*R*,5*R*)-1-t-butoxycarbonyl-2,5-diphenylpiperazine, 7111

resorcinarene cavitands, selective functionalisation of starting from tetrakis(bromomethyl)-cavitands, 5167

(*RR*/*SS*)-sinulariol-B, macrocyclic cembranoid diterpene from Japanese soft coral *Sinularia mayi*, total synth from *E*-geraniol, 671

symmetrical and unsymmetrical bis-tetraaza-macrocycles, synth using trivalent protecting groups, 7711

tetrakis and octakis(*m*-benzene-butadiyne)s, [4_4] and [8_4]metacyclophanes, synth and self-association, 9325

tetrathia 18, 20 and 22-membered dinaphthalene cyclophanes, 1603

tropiporphyrin, a cycloheptatrienyl porphyrin analogue, synth by condensation of 1,6-cycloheptatrienedicarboxaldehyde with a tripyrrane dicarboxylic acid followed by neutralisation and oxidation, 8825

1,4-xylylene-bis(1,4,8,11-tetraazacyclotetradecane), directed synth, 5301

see also Cembranoids, Macrolides

Macrolides

amphidinolide Q, cytotoxic 12-membered macrolide from cultured marine dinoflagellate *Amphidinium* sp., structure, 1449

bafilomycins, fragmentation of the 2,4-dihydroxytetrahydropyran portion under Mitsunobu conditions, 9001

(+)-brefeldin A, approach *via* Ni-catalyzed coup-

ling of cyclopentenyl acetate and lithium 2-furylborate, 6125
bryostatins, synth of the C1-C9 segment of bryostatin by kinetic resolution of racemic β-keto esters, 1767
bryostatins, *in vitro* study of their biosynthesis by the marine bryozoan *Bugula neritina*, 8305
clarithromycin A, oxidation of NMe_2 group using metalloporphyrins and hypochlorite; *N*-oxide, demethylation and deamination products, 787
cyclic hydropyran oligolides, synth by macrolactonisation of tris(hydropyran) hydroxy acids or by cyclooligomerisation of bis- or tris(hydropyran) seco acids, 343
cyclic oligolides, synth by an acylketene mediated lactonisation from 6-(ω-hydroxyalkyl)-dioxinone, 7683
epilachnene, norepilachnene, homoepilachnene, 9-propyl-10-aza-cyclododecan-12-olide and epilachnadiene, azamacrolides from Mexican bean beetle, synth from epoxychlorides, 8613
epothilon A and B, cytotoxic macrolides from *Sorangium-cellulosum* culture So ce901, synth of the C1-C9 segment from methyl 3-hydroxy-(2*S*)-methylpropionate, 9179
halichlorine, 15-membered aza-lactone from sponge, 3867
halichondrin B, synth of C1-C13 segment from L-mannonic γ-lactone, 8643
hygrolidin, 16-membered tetraene – antibiotic from *Streptomyces* sp., synth, 9073, 9077
intramolecular addition of carbenoid to amide carbonyl O, formation of 10-membered bicyclic imino-ether lactone, 8035
laingolide, 15-membered aza- from a blue-green alga, 7519
(*R*)-(+)-lasiodiplodin and de-*O*-methyl lasiodiplodin, plant growth inhibitors from fungus *Botrysdiplodia theobromae*, synth by ring-closing metathesis, 7005
latrunculin A and laulimalide, – marine sponge toxins, structure and absolute configuration, 159
macrolactin A, 24-membered polyene macrolide from deep sea bacterium, synth of the C11-C24 segment from *rac*-(methyl 6-oxo-2,4-hexadienoate)$Fe(CO)_3$, 9169
macrolactin A, synth of precursor by sequential couplings of vinyl groups, 3501
18-membered diamide-diester-thioether, synth and association behaviour, 2071
8-, 9- and 10-membered lactones, synth using dienetricarbonyliron compds, 6149
nystatin A_1, synth of C1-C10 fragment from chiral heptane-1,3,5,7-tetrol deriv, 2487
pamamycin-607, synth of a C1′-C11′ synthon of starting from ethyl (2*S*)-2-hydroxypentanoate in ten steps, 3747
pateamine, 19-membered bis-lactone containing thiazole ring, synth of core structure, 9107
phorboxazoles A, B, stereochemistry, 7879
preswinholide A, – constituent, stereoselective synth, 6881, 6885
9-propyl-10-azacyclododecan-12-olide, component of the defensive secretion of the Mexican bean beetle *Epilachna varivestis*, synth from methyl 9-ketododecanoate and from *N*-hydroxyethyl lactam, 2141, 2145
pyrenophorin, 16-membered dilactone, synth of seco moiety, 2381
rhizoxin, 16-membered macrolide from *Rhizopus chinesis*, construction of the C_{10}-C_{26} fragment using substrate directed allylstannane additions to aldehydes, 3291
spongistatin 1, cytotoxic macrolide from *Spongia, Spirastrella, Hyrtios* and *Cinachyra* genus, synth of the AB-spiroacetal subunit from 3-benzyloxypropanal, 8581
superstolides A, B, synth of *cis*-octahydronaphthalene portion, 8989
zapanolide, 20-membered macrolide from marine sponge *Fasciospongia rimosa*, isolation and structure, 5535
zooxanthellatoxin A, absolute configuration of spiroacetal portion, 7267

Magnesium and compds

ethylmagnesiation of terminal alkenes catalysed by zirconocene dichloride $CpCp'ZrCl_2$ (Cp′ = 1-neomenthyl-4,5,6,7-tetrahydroindenyl), 7139
(*R*)-2,2′-isopropylidene-bis(4-phenyl-2-oxazoline) and magnesium perchlorate as catalyst system for Diels-Alder reactions between 3-acryloyl-1,3-oxazolidin-2-one, 3027
magnesium enolates of alkyl hydrogen (acylamino)malonates, generation using the $MgCl_2$/R_3N base system, subsequent reaction with acid chlorides to yield α-acylamino-β-keto-esters, 3303
magnesium methoxide as reagent for the deprotection of alkyl esters, 455
reaction with alcohols in the presence of iodine, prep of magnesium alkoxides which could be treated with benzyl chloride or allyl bromide to produce benzyl alkyl ethers or allyl alkyl ethers, 5159

see also Grignard reactions/reagents
Manganese and compds
activation of manganese metal by catalytic amount of $PbCl_2$ and Me_3SiCl, use in allylation of carbonyl compds and Reformatsky-type reaction, 7049
allyl-, alkenyl- and functionalised arylmanganese reagents, prep by oxidative insertion of manganese-graphite into organic halides, 7009
chiral Mn(III)-picolinamide-salicylidene complex for asymmetric epoxidation of olefins, 2725
gem-dibromocyclopropanes, dialkylation with trialkylmanganate, $MnCl_2$-catalyzed reaction with RMgBr, 5377
4,5-dihydrofuran-3-carbonitriles, 3-hydroxy-1,2-dioxan-4-carbonitriles, synth from alkenes and acylacetonitriles using $Mn(OAc)_3$, 4949
epoxidation of (±)-3-alkylindenes by chiral Mn(III)-salen analogues, 4533
iron and manganese phthalocyanines, homogeneous catalysts for oxidation of naphthalenes by peracetic acid, 1637
$MnBr_2$/CuCl system as catalyst for cyclisation of unsaturated alkyl bromides, synth of five membered carbo- and heterocycles, 5865
organomanganese bromides, prep by oxidative addition of Rieke manganese to alkyl and thienyl bromides, 2197
organomanganese reagents, alkenylation of in the presence of $Fe(acac)_3$, synth of substituted olefins, 1773
polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst in enantioselective epoxidation of unfunctionalised olefins, 3375
Mn(III)-salen oxidation of silyl enol ethers, silyl ketene acetals, to chiral α-hydroxycarbonyl compds, 6531
(salen)manganese(III) complex as catalyst for aziridination of styrene derivs, 9245
Mannich reactions
construction of an amino alcohol library by parallel synth based on Mannich-type three-component reactions of aldehydes, amines and polymer-supported silyl enol ethers followed by cleavage from the supports, 7783
lanthanide triflate-catalysed reactions of *N*-(α-aminoalkyl)benzotriazoles with silyl enolates, synth of the corresponding β-amino ketone or ester derivs, 3731
Mannich-type thiomethylation of calix[4]resorcinarene, functionalisation at the extraannular positions, 8547
oxidative Mannich cyclisation of α-silyl-amines and -amides, synth of hydropyridines, 571
Marine metabolites
aceropterine, pseudopterane alkaloid from sea plume *Pseudopterogorgia acerosa* 2687
agardhilactone, a novel oxylipin from the marine red alga *Agardhiella subulata*, isolation and characterisation, 4635
almazole D, antibacterial 2,5-disubstituted oxazolic dipeptide from a delesseriacean seaweed of Senegal, structure, 3049
amphidinolide Q, cytotoxic 12-membered macrolide from cultured marine dinoflagellate *Amphidinium* sp., structure, 1449
aurilide, cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia*, isolation and stereostructure, 6771
auripyrones A and B, cytotoxic polypropionates from the sea hare *Dolabella auricularia*, structures, 5151
axinastatins 2-5, cyclic hepta- and octa-peptides from sponges *Axinella* spp, synth, 5355
batzelladines A-D, guanidine alkaloids from Caribbean sponge *Batzella* sp., synth of tricyclic portions of from a ptilomycalin A deriv, 6977
batzelladines, marine alkaloids, synth of 5,6,8b-triazaacenaphthene (guanidine) core by condensation of guanidine with octadeca-3,7-diene-2,9-dione, 6943
bryostatins, marine macrolides with a polyacetate derived backbone, synth of the C(10)-C(16) segment of bryostatin from a *meso* oxabicyclic ketone, coupling with C(1)-C(9) model, 7695
bryostatins, *in vitro* study of their biosynthesis by the marine bryozoan *Bugula neritina*, 8305
carduusyne A, synth by organometallic addition to pyrilium salts followed by Wittig homologation and dehydrohalogenation, 1913
chlorocarolides A and B, chloro-polyketides from cultured fungus *Aspergillus ochraceus* collected from marine sponge, 2331
clathryimine, 3-phenyl-6,7,8,9-tetrahydroquinolizinium-4-carboxylate, alkaloid from sponge *Clathria basilana*, 2389
(−)-clavukerin A from Okinawan soft coral *Clavularia koellikeri*, synth from (+)-limonene oxide *via* 8-*endo* cyclisation of (alkoxycarbonyl)methyl radicals, 5929
constanolactone E, marine eicosanoid from red alga *Constantinea simplex*, synth from allyl phenyl sulfone and chiral epoxymesylate, 7407
Ctenocella sp. gorgonian, structure of pectinoacetal-related sterols isolated from, 2959

curacin A, antimitotic agent from Caribbean cyanobacterium *Lyngbya majuscula*, synth from geraniol, 4397
curacin A, antimitotic antiproliferative antibiotic from marine cyanobacterium *Lyngbya majuscula*, synth of C1-C7, C8-C17 and C18-C22 segments and total synth of curacin A by condensation of the segments, 1795, 1799
curacin A, cyclopropropyl thiazoline from *Lingbya majuscula* (Cyanophyceae), synth, 7167
cyclotheonamide A, cyclic pentapeptide from Japanese marine sponge *Theonella* sp., transformation to a ring-opened product by treatment with sodium carbonate or triethylamine, 3667
cyclotheonamides, proteinase inhibitors from marine sponge *Theonella*, synth of cyclotheonamide B *via* guanidination of ornithine, 2261
dipuupehedione, cytotoxic dimeric sesterterpene from sponge *Hyrtios* sp., 3861
dispacamides, alkaloids with antihistamine activity from *Agelas* sponges, 3587
dolabellanes, synth of bicyclo[9.3.0]tetradecane skeleton using organo-Zr methods, 7661
dolastatin G, nordolastatin G, 35-membered depsipeptides, synth, 7299
ecteinascidin 743, enantioselective synth of spiro-fused tetrahydroisoquinoline component, 7163
eudistomins T and S from tunicate *Eudistoma olivaceum*, xestomanzamine A from *Xestospongia* sp., 1-acyl-β-carbolines, synth using iminophosphoranes, 9353
geodisterol, marine polyoxygenated sterol with an aromatic A ring from *Geodia* sp., structure, 8145
halichlorine, 15-membered aza-lactone from sponge *Halichondria okadai*, structure, 3867
(−)-halicyclamine B, tetracyclic diamine from the sponge *Xestospongia* sp., structure and biogenetic origin, 9151
halitunal, antiviral diterpene aldehyde from marine algae *Halimeda tuna*, synth from (+)-genipin, 2253
hemibrevetoxin B, neurotoxin from *Gymnodium breve*, synth based on double rearrangement-ring expansion of a 6,6-membered ether to a 7,7-membered ether and cyclisation of a hydroxy styrylepoxide, 6365
hippospongic acid A, triterpenoic acid from marine sponge *Hippospongia* sp., structure and biological activity, 7765
hyellazole, carbazole alkaloid from blue-green algae *Hyella caespitosa*, synth by allene-mediated electrocyclic reaction, 2593
hyrtiomanzamine, β-carboline alkaloid from Red Sea specimens of sponge *Hyrtios erecta*, 3457
incrustasterol A and B, cytotoxic polyoxygenated steroids from marine sponge *Dysidea incrustans*, synth, 4775
ent-isocopalic acid glycerides, nudibranch −, synth of two diastereoisomers, 3549
isodehydrothyrsiferol and 10-epidehydrothyrsiferol, polyether squalene derivs from red alga *Laurencia viridis*, structures, 2671
(±)-6β-isovaleroxylabda-8,13-diene-7α,15-diol, diterpene diol from pulmonate limpet *Trimusculus reticulatus*, synth from (±)-9-methoxycarbonyl-4,4,10-trimethyl-Δ^6-8-octalone, 7071
kakelokelose, sulfated mannose polysaccharide from tunicate *Didemnum molle*, 1979
keramaphidin B, manzamine-related alkaloid from sponge *Amphimedon* sp., absolute stereochemistry of on the basis of ^{1}H NMR of the MTPA esters, 8203
lagunapyrones A-C, cytotoxic acetogenic α-pyrones from unidentified marine sediment bacterium, structures, 1327
lasonolide A, cytotoxic macrolide from Caribbean marine sponge *Forcepia* sp., synth of the 2,2′-dialkylated pyranose subunit of from spirocyclopropane sugars, 8617
loloatin B, cyclic decapeptide antibiotic from *Bacillus* sp. isol. from tube worm, structure, 7201
macrolactin A, 24-membered polyene macrolide from deep sea bacterium, synth of the C11-C24 segment from *rac*-(methyl 6-oxo-2,4-hexadienoate)$Fe(CO)_3$, 9169
methyl (2*Z*,6*R*,8*R*,9*E*)-3,6-epoxy-4,6,8-triethyl-2,4,9-dodecatrienoate from Caribbean sponge *Plakortis halichondrioides*, absolute configuration of, 6681
nakienone B, marine natural product, synth by α-alkenylation of enones involving Pd-catalysed coupling of alkenylzincs with alkenyl iodides, 4679
palauolol, anti-inflammatory sesterterpene from the sponge *Fascaplysinopsis* sp., structure and absolute stereochemistry, 3951
penaramides, Ca-blocking long-chain bis-amides of 2,6,10,15,19,23-hexaazatetracosane methylated and quaternized at some N atoms, synth of penaramide A, 225

penostatins, cytotoxic metabolites from *Penicillium* sp. separated from marine alga *Enteromorpha intestinalis*, structure elucidation and cytotoxic activity, 655
phomactin D, PAF antagonist marine diterpenoid from marine fungus *Phoma* sp., synth from L-ascorbic acid, 7107
phorboxazoles A, B, macrolides from sponge *Phorbas* sp., complete stereochemistry, 7879
pinnaic and tauropinnaic acids with 6-aza-spiro[4.5]decane system isolated from mollusc *Pinna muricata* 3871
pinnatoxin A and D, macrocyclic toxins isolated from *Pinna muricata*, isolation and structure, 4023, 4027
plakinic acids, marine metabolites containing the 1,2-dioxolane group, synth from alkan-2-ones involving condensation, isomerisation and peroxymercuration, 1885
polycarpine dihydrochloride, dimeric 2-aminoimidazole disulfide from ascidian *Polycarpa clavata*, 2369
popolophuanone E, synth of 2,6-dialkyl-3,7,8-trihydroxydibenzofuran-1,4-diones, models for the central ring system, 5719
pseudoceratidine and analogues, synth, biological activity, 6041
pseudoceratidine, antifouling spermidine deriv from marine sponge *Pseudoceratina purpurea*, structure, 1439
Pseudopterogorgia americana acetone extract, use in ring C secosteroid synth, 8301
(+)-ptilocaulin, antibacterial and cytotoxic compd from the Caribbean sponge *Ptilocaulis aff. P.spiculifer*, synth involving photoreductive cyclopropane ring opening of a bicyclo[4.1.0]-heptanone deriv, 5091
pupukeamide, linear tetrapeptide from mollusc *Philinopsis speciosa*, 8993
rhopaloic acid A, norsesterterpene from marine sponge *Rhopaloeides* sp., inhibitor of gastrulation of starfish embryos and cytotoxin, structure and biological activity, 2265
ritterazine A, a cytotoxic dimeric steroid from the tunicate *Ritterella tokioka*, determination of orientation of the steroidal units by ^{15}N-HMBC NMR, 1447
sagitol, a pyridoacridine alkaloid from the deep water sponge *Oceanapia sagittaria*, structure, 9147
sarcoglane, diterpene with tricyclo[7.5.0.0^{10,14}]-tetradecane skeleton from soft coral *Sarcophyton glaucum*, structure, 6909
14,15-secocurvularin, polyketide from sponge *Spirastrella vagabunda*, 8973
(*RR/SS*)-sinulariol-B, macrocyclic cembranoid diterpene from Japanese soft coral *Sinularia mayi*, total synth from *E*-geraniol, 671
(+)-siphonarienone, marine polypropionate natural product, synth by asymmetric alkylation of the potassium enolates derived from *N*-propionyl benzopyrano-[4,3-c]-isoxazolidine, 1081
spirolides E and F from the digestive glands of shellfish, identification of the spirolide pharmacophore, 7671
spongistatin 1 (altohyrtin A), cytotoxic macrolide from *Spongia, Spirastrella, Hyrtios* and *Cinachyra* genus, synth of the AB-spiroacetal subunit from 3-benzyloxypropanal, 8581
stellettadine A, acylated bisguanidinium alkaloid which induces larval metamorphosis in ascidians, isolation from *Stelletta* sp., structure, 5555
stevensine, $C_{11}N_5$ marine sponge alkaloid, synth from the related alkaloid hymenin involving a protobromination/transbromination of 4′-bromohymenin, 8121
suberosenone, cytotoxic sesquiterpene from gorgonian *Subergorgia suberosa*, structure, 3259
tedanolide, an anti-tumour macrolide from Caribbean sponge *Tedania igunis*, application of computer-aided conformational analyses to synth of key 18-membered intermediate to, 385
topsentin, deoxytopsentin and bromotopsentin, marine bis-indole alkaloids, synth involving 1,2-addition/oxidation to construct the bis-heteroarylketones and heteroarylation involving 3-stannylindoles, 5503
tridachiapyrone, 4a,5-dihydrochromone polypropionate from mollusc *Tridachia crispata*, 4259
tridentatols A-C, phenolic metabolites from marine hydroid *Tridentata marginata*, structures and antifeedant activity, 9131
tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), isolation from *Latrunculia* South African sponge, 7135
untenines A-C, nitroalkyl pyridine alkaloids with anti-microfouling activity from the Okinawan sponge *Callyspongia* sp., structures and synth of untenine A, 1813
vallartanone B, a γ-pyrone-containing polypropionate from marine mollusc *Siphonaria maura*, synth and structure, 4749

yessotoxin, a polyether compd implicated in diarrhetic shellfish poisoning, absolute configuration by NMR with a chiral anisotropic reagent, 7087
yessotoxin (YTX), toxin of diarrhetic shellfish poisoning, relative configuration of and isolation of two new analogues 45-hydroxyYTX and 45,46,47-trinorYTX from infested scallops *Patinopecten yessoensis*, 5955
Ypaoamide, broadly acting feeding deterrent from the marine cyanobacterium *Lyngbya majuscula*, structure, 6263
zapanolide, 20-membered macrolide from marine sponge *Fasciospongia rimosa*, isolation and structure, 5535
zooxanthellatoxin A, absolute configuration of spiroacetal portion, 7267

Mass spectra
APCI (atmospheric pressure chemical ionisation), triacylglycerol positional isomers, 8593
EIMS, sapidolide A, tetrahydrofurano-lactone meroisoprenoid from *Baccaurea sapida*, 6791
fragments of sex pheromone of *Scrobipalpula absoluta*, tomato leafminer, structure determination, 411
gigantransenins A-C, mono-THF acetogenins from the bark of *Goniothalamus giganteus*, 5449
LC-MS of mixture synth of pyrrolidines from aldehyde resins, 3671
LSI, tetraanthraporphyrazine and its endoperoxide, 5083
MALDI TOF, modified oligonucleotide containing methidium dye, 8467
spirolides E and F from the digestive glands of shellfish, 7671

Mass spectrometry
cycloaddition of [60]fullerene to cyanogen dioxide, 2:1 and 3:2 adducts detected by MALDI-TOF MS, 4137
electrospray ionization MS of a dendritic Fe^{2+}-phenanthroline hexafluorophosphate, 8293
laser-induced uncoupling/desorption of biomolecules from UV-absorbing polymer film, affinity MS, 5669
negative ion electrospray –, sodium salts of cyclic phosphates, 5779

Mechanisms
$A_{AL}2$ – under acid catalysis for introduction and removal of benzhydryl (diphenylmethyl) ester group, 1965
antimalarial activity of cyclohexane and cyclohexene endoperoxides and metabolites, 7225
of conversion of *N,N'*-disubstituted arylthiohydantoins to the corresponding hydantoins by ring-opening/ring closure, 7727
cyclisation of γ-oxygenated-α,β-unsaturated sulfones, synth of hydroxypyrrolidines and hydroxypiperidines, 3379
diastereoselective iodohydroxylation of γ δ-unsaturated amides, proposed absence of involvement of iminium ion intermediate, 6843
formation of 2-fluorosilylacetophenones by treatment of 2-silyl benzamides with LDA driven by CIPE-facilitated α-silyl carbanion formation and rearrangement, 2915
Gif oxidations, hypersensitive probes in mechanistic studies, role of alkoxy radicals, 819, 823
oxidation of hydroquinones and alcohols with acyl nitrates, 5029
palladium-catalysed enediyne cyclisations, cycloreductions *via* alkylpalladium intermediates, 8875
peptide bond formation by intramolecular acylation of an acyl disulfide *via* a 6-membered ring intermediate, 933
photo-sensitised oxygenation of phenethylguanidoxime yielding a urea deriv and nitric oxide, chemical model for biological oxidation of N^{ω}-hydroxy-L-arginine and L-citrulline, 4393
of photochemical rearrangements of 9,10-disubstituted triptycene-1,4-quinone derivs, 2121
of radical-induced S_N1 substitution reactions, 4365
of reaction of allyl cation with butadiene, theoretical investigation of the mechanism using *ab initio* RHF and MP2 calculations, 1759
rearrangement of 4-PhS-1,3-diols with TsCl in pyridine, synth of allylic alcohols, scope and limitation of the [1,4] SPh shift, 1117
remote ϵ-secondary isotope effect in the reaction of tetracyanoethylene with 2,5-dimethyl-2,4-hexadiene, mechanism, 3075
reverse-Cope mechanism rather than acid-catalysed process in intramolecular cyclisation of hydroxylamines derived from limonene, 6417
Ritter reaction using trimethylsilyl cyanide, 8129
of stereo- and regioselective ether-ring opening of 1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldioxy arene systems with boron tribromide, 3651
of the thermal rearrangement of 7-vinylnorcaradienes, synth of products from the vinylcyclopropane-cyclopentene rearrangement and from the Cope rearrangement *via* a common biradi-

cal, 7761
of thiazolium catalysis, 8241
unexpected reaction between 2-aryl-1-nitro-1-alkenes and trialkylgallium compds *via* NO_2/alkyl substitution, 3347

Medium-ring carbocycles
acanthostral, an antineoplastic *cis,cis,cis*-germacranolide from *Acanthospermum australe*, structure, 1455
cornexistin, 9-membered ketone with cyclic anhydride moiety, conversion into diester using $TMSCHN_2$, 1967
cis,cis,trans-1,5,9-cyclododecatriene, dynamic C NMR study, 4267
3-(α-ethoxybenzyl)-cycloundec-3-ene-1,5-diyne, synth, 8413
free-radical ring expansion of fused (n,4) systems with C=O adjacent to fusion position, forming (n+2)-membered cyclic ketones; 7- and 8-membered examples, 6519

Medium-ring heterocycles
disubstituted scalemic azocines, synth *via* intramolecular alkylation and olefin metathesis, 4317
lactones, approach *via* dienetricarbonyliron compds, 6149
(+)-octalactin A, cytotoxic lactone natural product, synth of two key intermediates to, 5049

Meerwein-Ponndorf reactions
Meerwein-Ponndorf-Oppenauer reaction of aldohexopyranose induced by air-oxidised samarium diiodide, conversion to ketohexopyranose, 5987

Membranes
72-membered macrocyclic phospholipid which is a unimolecular version of the two-molecule unit spanning a membrane bilayer, synth, 323

Mercury and compds
N-acetylneuraminic acid, synth of a methylmercury-containing derivative, 7307
Hg(II) fulminate, use in one-step cyanohydroxylation of olefins, 1165
mercuri-desilylation with ring opening of cyclopropylmethyl silanes, formation of homoallylmercury compds, stereochemistry, 1209
organomercurials obtained by cleavage of cyclopropyl alcohols, conversion to *cis*- and *trans*-fused lactones by carbonylation in the presence of *p*-benzoquinone, 1125
organomercurials, reduction of the carbonyl group of by protection of the mercury by methylation, synth of annulated lactones, 5585

Mesoionic compds
münchnone (mesoionic oxazol-5-one) intermediate in Ugi four-component condensations on polymer support, 1149

Metabolites
1,3-butadiene, synth and separation of optically pure –, 3,4-epoxybutane-1,2-diols, 7929
diphenazithionin composed of two phenazinecarboxylic acids connected by a sulfur linkage, isolation from *Streptomyces griseus*, structure and inhibitory activity of lipid peroxidation, 9227
fusarentin methyl ethers, 3-alkyl-3,4-dihydro-6,7,8-trioxy-isocoumarins, mould metabolites, enantioselective synth using 3-acyl-2-oxazolidinone enolate alkylation, 8053
neuchromenin, microbial metabolite from culture broth of *Eupenicillium javanicum* var. *meloforme* PF1181, isolation and structure elucidation, 6363
Sch 65676, fungal metabolite with inhibitory activity against the cytomegalovirus protease, structures, 3943
squalestatins, fungal metabolites with inhibitory activity against squalene synthase, synth of the C-4 carboxamide derivs, the C-4 amides and C-4 hydroxymethyl derivs, 8925
syringolide 2, elicitor – of *Pseudomonas syringae* pv. *tomato*, synth from xylulose, 3557
3,7β,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene, reactive – of benzo[*a*]pyrene, synth, 1527
triphenylene –, stereocontrolled synth of *syn*- and *anti*- 3,4-epoxy-1,2-diols, 8267

Metalation
diastereoselective allylzincation of δ-mono and γ,δ-disubstituted Z vinyl metals, 5873
directed metalation reactions; intermolecular competition of the carboxylic acid group and various substituents, 8175
metal amide reaction with 1,3-diselenanes, synth of 2-metallo-diselenanes bearing the metal in equatorial position, 2667
protection, metalation and electrophilic substitution of 5-methyl tetrazole, synth of 5-substituted tetrazoles, 3651
sequential – and metal-halogen exchange of 3,5-dibromopyridine, synth of 4-alkyl-3,5-dibromo-, 3-bromo-4,5-dialkyl- and 3,4,5-trialkylpyridines, 2565
trans– of an α-lithio-β,β-difluoroenol carbamate with CuX_3Li_2, synth of a difluorovinylcopper

reagent which reacted with activated haloalkanes and acid chlorides, 5975
of Troeger's base by complexation with boron trifluoride etherate followed by treatment with n-BuLi, 6267

Metals

Ag^+-fullerene interactions inducing a solution colour change, 7091
δ-mono and γ,δ-disubstituted Z vinyl metals, diastereoselective allylzincation of, 5873

Michael reactions

addition – of thiophenols to cycloalkenones catalysed by free bases of chiral *N*-substituted porphyrins, 2585
addition of azoles with α,β-unsaturated nitriles and esters catalysed by bicyclic guanidines, kinetic *versus* thermodynamic control, 4423
addition of benzene leading to the formation of 3,3-diphenylpropionanilide, 6369
addition between Fmoc-L-Cys-allyl ester and Boc dehydroalanine-methyl ester, synth of lanthionine, the thioether analogue of cystine, 1101
addition in one-step synth of acyclic nucleoside phosphonic acids in the purine and pyrimidine series, 4701
addition reactions of 3-methoxyestra-1,3,5(10),6-tetraene derivs involving dimethylsulfoxonium methylide, synth of C6-C7 methylene-bridged derivs of estradiol, 1771
addition of thiols and amines to 3-(2*H*)thiophenone 1,1-dioxide, synth of the corresponding vinyl sulfides and enamines, 119
addition of various β-ketoesters to enones and α,β-unsaturated aldehydes catalysed by ytterbium triflate, synth of corresponding 1,4-adducts, 1879
alkenylcyclohexadienyl-$Fe(CO)_3$ and -$Fe(CO)_2$ PPh_3, conjugate addition of nucleophiles, long-range asymmetric induction, 9009
asymmetric conjugate allylation of *N*-(8-arylmenthyloxycarbonyl) 2,3-dihydro-4-pyridones catalyzed by $TiCl_4$, synth of coniine, 9063
asymmetric Michael reactions promoted by La-Na-BINOL complex (LSB), 5561
bis(trimethylsilyl) phenylphosphonite addition to electron-deficient olefins, synth of phenylphosphinic acids, 1651
cyanoethylation and t-butoxycarbonylethylation of polyols under PTC, 1237
α-*O*- and *S*-2-deoxyglycosides, synth by – of hex-1-en-3-uloses followed by borohydride reduction, 3453
enantioselective Mukaiyama-Michael reactions of 2-carbomethoxy cyclopentenone catalysed by chiral bis(oxazoline)-Cu(II) complexes, 8921
of ketone lithium enolates using a chiral amine ligand, 6343
lithium dibenzylamide promoted addition of acetophenone to diethyl maleate, effect of TMSCl on reaction course, 4281
methyl carvone, reaction with methyl acrylate, three – and one Dieckmann reaction form tricyclo[5.3.1.$0^{3,8}$]undecane system, 8061
organocuprate addition to αβ-unsaturated esters, influence of γ-ether substituents, synth of polypropionate and related motifs, 7473
treatment of t-butyldimethylsilyl ethers with tetra-*N*-butylammonium fluoride, synth of cyclic acetals, 2927

Microbial reactions

Acinetobacter calcoaceticus and *Pseudomonas* sp., enantioselective synth of 1,3-dithiane 1-oxide using, 6117
baker's yeast reduction of ethyl 3-oxo-4-(phenylthio)butyrate, enantioselective *N*-methoxy-β-lactam synth, 7533
Geotrichum candidum, acetone powder, chiral reduction of ketones using a 2-alkanol as reductant, 1629
reduction of α,α,α-trifluoro-α′-sulfenyl ketones by various –, diastereo– and enantio-selection, 3903
sclareol oxidation to 3-oxosclareol using *Mucor plumbeus*, 1241

Microorganisms

Corynebacterium sp. C12, use in chemoenzymatic resolution and deracemization of (±)-1-methyl-1,2-epoxycyclohexane, synth of (1*S*,2*S*)-1-methylcyclohexane-1,2-diol, 8819
diastereoselective reduction of β-ketoesters by baker's yeast in petrol, 1699
Fischerella muscicola, cyanobacterium, isolation and structure of fischerellin A, perhydro-3-(pyrrol-2-ylidene)pyrrole-2,4-dione with alkene-diyne tail, 6539
Flavobacterium memingosepticum, flavolipin, immunoactivating lipid, synth of all stereoisomers of proposed structure, but none identical with the natural product, 3875
Geotrichum candidum, alcohol dehydrogenase from, enantioselective reduction of trifluoromethyl ketones, 5727
Lingbya bouillonii (Cyanophyceae), 15-membered aza-macrolide, isolation, structure, 7519
Lingbya majuscula (Cyanophyceae), synth of

curacin A, cyclopropropyl thiazoline, 7167
Oscillatoria agardhii (Cyanophyceae), isolation and structure of oscillatorin, cyclic decapeptide containing oscillatoric acid, unusual pyrroloindole amino acid, 6873
Microwave heating
2-benzoyl-1-cyclohexyl-3-phenyl-aziridine, MW-induced cycloadditions, 4203
cleavage of using organotin oxides and hydroxides, comparison of classical and –, 5229
2,3-dihydro-1,4-diazepines and 1*H*-1,5-benzodiazepines containing CF_3 groups, synth, 2845
effect of microwave radiation on enzymic reactions in organic media, 8383
ketene acetals and dithioacetals by elimination from β-haloacetals using base and PT catalyst, comparison of yields using microwave and ultrasound activation, 1695
Knoevenagel condensation of carbonyl compds on malononitrile in dry media under microwave irradiation and catalysed by silica gel, 1113
microwave irradiated reaction of pyridine *N*-oxide with benzylic bromides, synth of aromatic aldehydes, 7725
microwave promoted synth of *trans*- and *cis*-3-hydroxy-2-(4-methoxyphenyl)-2,3-dihydro-1,5-benzothiazepin-4(5*H*)-one, 6413
microwave-assisted synth of α-amino-β-lactams using the tetrachlorophthalimido group as a masked amino substituent, 6989
pyrolytic β-elimination of sulfoxides promoted by microwave irradiation, 1855
tetrahydropyridazine-3,6-dione synth from anhydrides, regiochemistry, 4145
to enhance the Leuckart reductive amination of carbonyl compds, 8177
Migration
alkylsulfanyl (SMe, SEt and SCH_2Ph) and sulfanyl (SH) migration in the synth of substituted tetrahydrofurans, 4823
1,8-dioxa- and 1-oxa-8-thia-spiro[4.5]decanes, stereocontrolled synth involving PhS –, 4581
O→O' *N,N*-diethylcarbamoyl – in a 1,2-diol, 6061
hydrogen migration from C-24 to C-25 during biomethylation in ergosterol biosynth, stereochemistry of, 1339
migratory aptitudes of Ph *vs* cyclohexyl in 1-bromo/chloro-1-lithio-2-cyclohexyl-2-phenylethene rearrangement, 5269
phenylthio migration for synth of cyclic and spirocyclic sulfides, 707
photoacetyl migration in irradiation of substituted α-dehydrophenylalanine, synth of isoquinoline and 1-azetine derivs, 5917
Mitsunobu reactions
alkylation of cyanomethyl sulfones, new reagents to effect –, 2459
alkylation of *p*-toluenesulfonamide by –, 2457
α-azido esters, stereospecific synth using trisyl azide or Mitsunobu reactions, 7477
cyclization of chiral *N*-methoxy-3-hydroxy-4-(phenylthio)butyramide, enantioselective *N*-methoxy-β-lactam synth, 7533
(*S*)-7,8-difluoro-3-methyl-2*H*-1,4-benzoxazine, synth by $ZnCl_2$-assisted Mitsunobu cyclization, 9317
formation of ether derivs of phenolic containing structures using solid phase Mitsunobu chemistry on functionalised polyethylene pins, 3019
with *N*-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine and α-hydroxyphosphonates, synth of *N*-hydroxy-α-amino phosphonate derivs, 6331
of primary and secondary alcohols using DBAD or DEAD, synth of protected hydrazines, 4327
synth of cyclic ethers and amines, 2463
N-tosylamination of a chiral benzylic alcohol, 5329
treatment of alcohols with Ph_3P/DEAD or Bu_3P/ADDP, synth of products resulting from intramolecular cyclisation followed by Stevens rearrangement, 8133
treatment of dialkyl phosphite with triphenylphosphine and diisopropyl azodicarboxylate followed by addition of alcohol results in formation of the corresponding trialkyl phosphite, 1087
Models
NADH model compds by reaction of a pinyl substituted Hantzsch ester with dimethylaluminium amide, subsequent reduction of methyl benzoylformate with these models yielded both enantiomers of methyl mandelate, 3275
Molecular design
concave spacers for long-range electron transfer models, oxido- and ethano-bridged hexahydropentacene and -hexacene derivs, 6089
Tröger's base analogues with dicarboxy functionality, synth, 5791
Molecular modelling/mechanics
bowl-shaped all-carbon framework surrounding aryl halide moiety, synth, structure, reactivity, 3141

complexation of methylviologen with 1,4-dimethoxybenzene in presence of alkali metal ions in zeolite cavity, 2873
conformation of model of vancomycin part structure, Insight II and Discover programs, 8791
conformational analysis of oligonucleotides where the phosphodiester linkage has been replaced by an acetylenic bond, comparison between carbon-, sulfur- and oxygen-containing analogues, 5511
a decahydrohexapyrrin, conformation, 763
free energies of hemiacetal formation in aqueous solution between alcohols and acetaldehyde, chloral, and fluoral, effect of $n \rightarrow \sigma^*$ interactions, calculated by AM1 and Insight II, 9279
heptane-1,3,5,7-tetrol diacetonides, MM3 studies, 4479
N-(2-hydroxy-2-phenylethyl)-*N*-(3-oxo-3-phenylpropyl)-benzylamine, bicyclic chelate structures controlling diastereoselection in reduction by complex hydrides, 7897
intramolecular photochemical [2+2] –, calculation of biradical conformations in synth of fused cyclobutanes, 1641
inward-facing 3,6-di-2-pyridylpyridazine rings fused to rigid molecular racks, synth, NMR, 2825
macromodel 3.5a study of dendrimers with internal chiral diaryl 1,3-dioxolan structures, helical conformations, 6077
recognition of β anomer of phenyl glucoside in water using Stoddart's cyclobis(paraquat-*p*-phenylene) receptor, 287
steric parameters for amines estimated by MOPAC, application to adrenergic blocking activity of β-haloalkylamines, 4617
synth of accurate distance models of the primary donor-primary acceptor pair of bacterial photosynthetic reaction centres, 6807
and synth of molecular systems ("mappemondes") from calix[4]-bis-crown, 3325
vancomycin analogs SAV-1 and -2, interaction with resistant cell wall model, 191
see also Theoretical calculations

Molecular recognition
butenolide recognition by cleft type receptors based on chromenone derivs, synth, 1485
chiral recognition energy based on simple model and van der Waals potential, role of van der Waals forces in enantioselective processes, 2581
chiral – of aminoacid derivatives by 1,1'-binaphthalene-8,8'-diol, association constants and binding energy differences, 4153
dicarboxylate ions, – by bis-phenylureas derived from *cis*-1,5-dipropyl-1,2,3,4,5,6,7,8-octahydroanthracene-1,5-diamine, 2795
dye-bound pyrrolidine with two macrocyclic side arms at positions 3 and 4, sequence-selective receptors for peptides, 8699
2(5*H*)-furanone H-bonded to a ureido-chromone-2-carboxamide, catalysis of pyrrolidine addition, 6947
guanidinium based tweezer receptor with two tripetide chains, synth on solid support, 5409
imides with 2-naphthoyloxy groups, (9-)butyladenine receptor, NMR complexation-induced ^{1}H shifts, 6109
in photocycloaddition of Kemp's imide-linked coumarin with thymine, 8523
oxidation and chiral – of amino esters by dioxoruthenium(VI) porphyrins, formation of new imino ester Ru(II) complexes, 6701
of phenyl glycopyranoside and β anomer of phenyl glucoside in water using Stoddart's cyclobis(paraquat-*p*-phenylene) receptor, 263, 287
three-point – of dimethyl aspartate by a bis(2,7-dihydroxy-1-naphthyl) zinc porphyrin, kinetics of association and dissociation by NMR relaxation rates, 5369
vancomycin analogs SAV-1 and -2, interaction with resistant cell wall model, 191
see also Receptors

Molybdenum and compds
cyclohexadiene-Mo(CO)$_2$cpd$^+$ PF_6^-, use in carbazole synth, 7947
dioxy-Mo(VI) bonded to two catechols each attached to 2-aminopyridine H-bonding receptor, adipic acid complexation, 1201
(hexamethylphosphoramido)oxodiperoxo-Mo(VI), oxidation of C=C in azidomitosene and synth of (±)-mitomycin K, 6049
molybdenum-catalysed bromination procedure based on mode of action of haloperoxidases, 8609
Schrock Mo-alkylidene catalyst, effectiveness in metathetic cyclization of diallyl sulfide to 2,5-dihydrothiophene, 9373

Mould metabolites
ampullicin and isoampullicin, pyrrolinone sesquiterpenoids, synth using Wittig and Horner pyrrolinone phosphorus intermediates, 5809

Mukaiyama reactions
enantioselective Mukaiyama-Michael reactions of 2-carbomethoxy cyclopentenone catalysed by chiral bis(oxazoline)-Cu(II) complexes, 8921

of *N*-protected β-amino α-selenyl aldehydes, synth of β-hydroxyselenides, conversion into oligopeptides containing an oxirane ring in the place of a peptidic bond, 2651
trialkylchlorosilanes with $B(OTf)_3$ form "supersilylating agents", potent reagents for allylsilane/aldehyde additions and Mukaiyama aldol reactions, 9401

Myers-Saito reactions
switch from the Myers-Saito reaction to the C^2-C^6-cyclisation in enyne-allene thermolyses, 7691

Naphthalenes
α-tetralones, conversion into 1,2-dihydronaphthalenes by hydride donation from pentane-2,4-diols in presence of *p*-TSA, 1941
2-acyl-*N,N*-dialkyl-naphthamides, diastereoselective additions to, asymmetric induction using atropisomers, 5577
axially chiral 1,1′-binaphthalene-8,8′-diol (BNDO) as derivatising reagent to determine the absolute configuration of α-chiral carboxylic acids by ^1H and ^{13}C NMR spectroscopy, 4737
1,1′-binaphthalene-8,8′-diol as a chiral controller in synth of optically active ketones by 1,4-addition of lithium dialkyl cuprates, 7373
1,1′-binaphthyl-substituted α-aminoisobutyric acid, a new chiral atropisomeric α,α-disubstituted glycine, synth by bis-alkylation of a glycine t-butyl ester Schiff base, 2971
bis[1,1′-bi-(2-methoxynaphthalen)-3-yl]acetylene, synth, 4459
(*R,S*)-1,1′-bi-5,6,7,8-tetrahydro-2-naphthol, *ipso*-fluorination of, synth of atropisomeric fluorocyclohexadienones, 7735
chiral binaphthyl auxiliary, formation by [1,2]-Wittig rearrangement of benzyl and allyl ethers of mono-methoxymethyl binaphthol, 8903
2,3-bis(chloromethyl)-1,4-naphthoquinone, reaction with 2-nitropropane anion by consecutive $S_{RN}1$ reactions leading to the bis-*C*-alkylation product, 3323
1-cyano-2-(2-oxa-4-alkenyl)naphthalenes, regioselective intramolecular photocycloaddition of in the presence of Eu(III) salt, salt and solvent effects, 7775
cycloadditions of 2-iodoaryl allenes, Pd-catalyzed synth of – and fused dihydro–, 4251
Diels-Alder synth of 1-naphthols by benzyne route, 3097
N,N-dihexyl-1-naphthamides, asymmetric deprotonation to provide atropisomers of *N,N*-dihexyl-2-alkyl-1-naphthamides, 2899
dihydronaphthalene epoxides, enantioselective hydrolysis by the fungus *Beauveria sulfurescens*, synth of enantiopure epoxides and vicinal diols, 3319
dihydronaphthalene stannane, coupling with aryl iodides, exclusive cine substitution, evidence for intermediate Pd(0) carbenes, 6997
1,5-diiodo-2,3,4,6,7,8-hexahydro– by iodine-induced transannular coupling of 1,6-cyclodecadiyne, 1571
1,4-dimethoxy-, haloacetoxylation using hypervalent iodine chemistry, 6443
1,8-diphenylnaphthalene and its mono and bis (chromium tricarbonyl) complexes, geometry, spectra, 5385
exciplex fluorescence in inclusion complexes of – derivatives, 4833
imino-iodonium zwitterions from 2-amino-1,4-naphthoquinone and ArI(III) compds, 913
iodination of with *N*-iodosuccinimide in acetonitrile, 4081
isofregenedane diterpenoids, synth by octahydronaphthalene skeletal rearrangements catalyzed by I_2, 1659
macrocyclic bis(1,4-naphthalene disulfide) derivs, synth by $S_{RN}1$ reactions, 1603
7-methoxy to 5-methoxy tetralin rearrangements mediated by $ZrCl_4$, 3607
methoxy-(2-naphthyl)acetic acid as chiral anisotropic reagent in determination of absolute configuration of yessotoxin by NMR, 7087
(±)-8α-methoxycarbonyloxy-4aβ-methyl-2,3,4,4a,5,6,7,8-octahydronaphthalene, importance of chirality reversal depending on the palladium-chiral phosphine ratio, 7115
methyl 2-hydroxy-1- and 1-hydroxy-2-naphthoates by acid-catalyzed cyclization and Wolff rearrangement with cyclization, respectively, of methyl 5,5-diphenyl-2-diazo-3-oxopent-4-enoate, 8277
2-methyl-1,4-naphthoquinone, functionalisation of saturated hydrocarbons in Gif-type systems using –, 1755
5-methylchrysene and its 2-hydroxy- and 8-hydroxy derivs, synth from 2-naphthalene boronic acid, 6271
2-naphthaldehyde, photoreaction with cyclic ketene silyl acetals, synth of 2-siloxy-2-alkoxyoxetanes, 5901
naphthalene-1-carbonitrile, photocycloaddition of norbornadiene, 4895

10,11-[1,4-naphthalenedione]dipyrido[3,2-*a*;2′,3′-*c*]phenazine, an acceptor polypyridine ligand, synth by condensation of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, 5437
naphtho[1,2-c;5,6-c]difuran, analogue of isobenzofuran, synth from 2,6-dimethylnaphthalene, 8845
naphthoic acid component of neocarzinostatin chromophore, synth from 4-bromo-3-methylanisole by photocyclisation reaction, 587
naphthyl esters, photo-Fries reaction of within zeolites, 6251
cis-octahydronaphthalene portion of superstolides, synth, 8989
optically active, axially chiral binaphthol-based oligomers, synth *via* Hay's coupling from the corresponding monomer, 2979
(±)-(13*E*)-2-oxo-5α-*cis*-17α,20α-cleroda-3,13-dien-15-oic acid, a 4a,5,6,7,8,8a-hexahydronaphthalen-2(1*H*)-one, stereoselective synth, 6869
photocycloaddition of 1-naphthalenecarbonitrile to furan, *endo* and *exo* [4+4] cycloadducts, and [2+2] product from Cope rearrangement of the latter, 9329
photosensitized defluorination of perfluorodecalin, role of perfluorooctalin in arenethiolate defluorination/aromatization, 2373
Ru[(*R*)-2,2′-bis(diphenylphosphino)-1,1′-binaphthyl]$(O_2CCH_3)_2$ as catalyst for asymmetric hydrogenation of *N*-tosylimines, 6669
tetralin, 1,1- and 1,4-dimethyltetrahydro–, asymmetric benzylic hydroxylation using catalytic Mn(III)-salen complexes and PhIO or C_6F_5IO, 4979
β-tetralones, metalloenamine azaannulation, synth of angular (10b) alkylated 1,2,4a,5,6,10b-hexahydrobenzo[*f*]quinolin-3(4*H*)-ones, 4121
(tricarbonylchromium)naphthalene, ligand exchange reaction with a dibenzannulene, synth of bis-complexed large ring benzannulene, 6665
triple-layered orthonaphtho[3.3]orthobenzeno-[3.3]orthonaphthophane, synth and structure, 65
(+)-valerane, 9,10-dimethyldecalin system, synth from (*R*)-carvone, 2863
vitamin D_3 analogues with decalin-type CD rings, 9361

Natural products

blepharocalyxins A and B, diarylheptanoids from *Alpinia blepharocalyx*, structures, 7283
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
(-)-goniofupyrone,furano[3,2-*b*]pyran-5-onederiv from *Goniothalamus giganteus*, synth and absolute configuration, 5389
(+)-patulolide A and (−)-pyrenophorin, synth of γ-oxo-α,β-unsaturated carboxylic acids from furans as intermediates to, 4385
plukenetione A, 1-benzoyl-2,4,9-trioxoadamantane deriv from *Clusia plukenetii* (Guttiferae), 8663
structure determination of natural products by differentiation of HMBC two- and three-bond correlations, 363
tonghaosu, (hexa-2,4-diyn-1-ylidene 1,6-dioxaspiro[4.4]nonene deriv), 2-thienylmethylene analog, and 1,6-dioxaspiro[4.5]decane analog of that, from *Chrysanthemum segetum*, synth, 893
see also Alkaloids, Antibiotics, Marine metabolites, Steroids and sterols, Terpenes and terpenoids, and other classes

Nazarov reactions

nopinone and β-methylverbanone, conversion into bridged 2,3,4,4a-tetrahydro-1*H*-fluorenes using – with derived allylic benzyl alcohol, 7241

Neighbouring group effects

assistance from sulfinyl group with concomitant deoxygenation in hydrolysis of nitriles, 4569
diastereoselective iodohydroxylation of γδ-unsaturated amides, proposed absence of involvement of iminium ion intermediate, 6843
hydroxyiodination of acetoxy-cyclohexenes, preparation of tetraacetyl conduritol D, 6579
ring-opening of epoxide by adjacent Boc-amine group, 4525

Nickel and compds

$Ni(MeCN)_6(BF_4)_2$-catalyzed hydrovinylation of styrenes, synth of 3-aryl-1-butenes, 1157
nickel(0) catalyst prepared from $NiCl_2$(dppf) and BuLi as catalyst for cross-coupling reaction of chloroarenes with phenylboronic acids, synth of biaryls, 2993
nickel boride as catalyst for the *cis*-selective semihydrogenation of acetylenes, 1057
$NiCl_2(PPh_3)_2$ as catalyst for coupling of lithium organoborates and aryl mesylates and tosylates possessing an electron withdrawing group, 8531
$Ni(PPh_3)_2Cl_2$ as catalyst for alkylation and hydride addition of allylic ethers, 3613
Ni-promoted reductive cyclization of dienyl aldehyde, effect of added diene, 887

olefin hydrogenation using $NiCl_2.2H_2O$/Li/naphthalene, 6925
Raney nickel, Raney nickel-sodium hypophosphite-acetate buffer system for reductive desulfurisation of thioethers bearing an optically active alcohol, 2271
Niobium and compds
niobium and tantalum complexes as Lewis acids, 6011
Nitration
– of ethyl linoleate by NO and O_2, 5773
acetyl nitrate – of steroidal enamides, 2079
of aromatics with nitric acid and isopropyl nitrate catalysed by sulfuric acid supported on silica-gel, 513
of oxindole, synth of 3,3,5,7-tetranitrooxindole and 3,5,7-trinitroindazole, 9263
Nitrenes
(ethoxycarbonyl)nitrene, reaction with α,β-unsaturated esters, synth of aziridine-1,2-dicarboxylates, 3777
Nitric acid and derivs
acyl nitrates for oxidation of hydroquinones and alcohols with acyl nitrates, 5029
Nitrile oxides
addition to cobalt-coordinated 1,3-enynes, synth of 5-alkynyl-2-oxazoline derivs, 4341
cycloaddition of [60]fullerene to cyanogen dioxide, 2:1 and 3:2 adducts detected by MALDI-TOF MS, 4137
cycloaddition to 1-acetylvinyl carboxylates, high regioselectivity and ready aromatization of dihydroazole adducts, 6835
nitrile-*N*-oxides, 1,3-dipolar cycloaddition with 3,5-di-t-butyl-1,2-benzoquinone, formation of spiro-1,3-dioxazoles, 5623
from Grignard reaction of α-phenyl-β-nitrostyrene and β-nitrostyrene, 6339
oxidation of by *N*-methyl morpholine *N*-oxide, synth of nitroso carbonyl adducts, 1909
3-substituted 5-hexenyl nitrile oxides, *gem*-dicarboalkoxy effect for intramolecular dipolar cycloaddition of, 451
Nitriles
3-benzyloxyglutaronitrile, hydrolysis of, synth of (*S*)-3-(benzyloxy)-4-cyanobutanoic acid which can be transformed to (*R*)-4-hydroxy-5-cyanopentene, a known precursor of the lactone moiety of mevinic acids, 6001
ω-bromonitriles and γ,δ-unsaturated nitriles, addition of Grignard reagents to, synth of functionalised cyclic imines, 6227
carbonitrile reaction with benzoyl chloride adducts of pyridine and quinoline *N*-oxides, synth of 2-pyridyl- and 2-quinolyl diacylamine *via* a carbene intermediate, 69
conjugate addition of diorganozincs to αβ-unsaturated – in *N*-methylpyrrolidone, 4495
cyanoethylation of polyols under PTC, 1237
cyanohydroxylation of olefins, use of mercury(II) fulminate and Li salts, 1165
di–, Ritter reaction with *cis*-indane-1,2-diol, formation of chiral C_2-symmetric bis(oxazolines), 813
from reaction of alkane- and arylalkanenitrolic acid esters with Bu_3SnH in the presence of AIBN, 7791
hydration of – catalyzed by fluoroapatite (natural phosphate) doped with KF and trisodium phosphate, 6555
α-hydrazinonitriles, synth by addition of trimethylsilyl cyanide to chiral hydrazones derived from (*S*)-1-amino-2-methoxymethylindoline, 7795
2-(isopropylsulfonyl)-bicyclo[2.2.1]hept-5-ene-2-carbonitrile, reduction of *via* a radical intermediate, 4717
nitrile-*N*-oxides, 1,3-dipolar cycloaddition with 3,5-di-t-butyl-1,2-benzoquinone, formation of spiro-1,3-dioxazoles, 5623
photocycloadditions of acrylonitrile and crotononitrile to 2-methyloxazolo[5,4-*b*]pyridine, isolation of fused azocines and bridged structures, 5783
4-pyridinecarbonitrile, aminoalkyl-decyanation of with imines, synth of 4-pyridinemethanamines, 3009
reduction of by iodotrichlorosilane, 2297
substituted acetonitriles, alkylation, reduction by DIBAL to imines, conversion into 3-substituted pyrroles, 4099
2-substituted *N*-(benzylidene)glycinonitriles, direct vinylation of, synth of α-vinyl substituted nitriles, 8909
thermal behaviour of 2,4,5-hexatrienenitriles, 839
see also Cyano compds, Cyanohydrins
Nitrilimines
cycloaddition to 1-acetylvinyl carboxylates, high regioselectivity and ready aromatization of dihydroazole adducts, 6835
Nitro compds
β-acetoxy-nitroalkane with benzyl isocyanoacetate for pyrrole synth, 2325
3-*O*-acetylated sugar 1-nitro-1-alkenes, reduction with zinc and acetic acid, route to 2,3-unsatu-

rated sugar derivs, 415
N-acetyl-D-glucosamine-derived *C*-β-D-glycosyl synthons - formaldehyde, nitroethane, nitroethene, 2341
aliphatic nitro-diols, oxidation by dimethyldioxirane of CHOH to CO, inhibition hy adjacent NO_2 group, 3507
allylic nitroacetate introduction by Pd-catalysed methods, 3799
2-aryl-1-nitro-1-alkenes, unexpected reaction with trialkylgallium compds *via* NO_2/alkyl substitution, 3347
1-arylthio-1-nitroalkenes, nucleophilic epoxidation of, synth of *anti*-β-amino-α-hydroxy acid derivs, 2311
by oxidation of amines using methyltrioxo-Re(VII)/H_2O_2, 805
chiral (E)-nitroalkenes bearing a γ-stereocenter, addition reaction with carbon nucleophiles, stereoselectivity, 3055
conjugate addition of diorganozincs to nitroolefins in *N*-methylpyrrolidone, 4495
denitration of sec. –, direct (Bu_3SnH) or indirect (*via* amine and isocyanide), in sorgolactone synth, 3491
m-dinitrobenzene, photo-substitution with C-nucleophiles in presence of TBAF, 7591
2,2'-dithiobis(5-nitropyridine) as reagent for the activation of thiol function of cysteine in peptides and subsequent disulfide formation, 1347
1-ethoxymethyl-5-nitro-6-substituted uracils as potential HIV-1 RT inhibitors, synth involving displacement of a 6-methylthio or a 6-tosyl group by nucleophiles by addition-elimination mechanism, 1031
nitro analogues of distamycin, synth and DNA binding properties of, 7801
3-nitro-2-cyclohexenone, photochemistry of, 3939
5-nitro-6-cyanomethylpyrimidinederivs, reductive cyclodeamination of, synth of pyrrolo[3,2-*d*]-pyrimidines (9-deazaguanines), 5829
nitroalkanes, Michael addition to conjugated enones in water with cetyltrimethylammonium chloride, synth of γ-nitroketones, 8027
nitroalkanes, treatment with a base and subsequent reaction with $TiCl_4$, synth of hydroximoyl chlorides, 6407
nitroalkenes derived from (*R*)-2,3-isopropylidene glyceraldehyde, cyclopropanation and addition reactions of, synth of *syn*-nitrocyclopropanes, 6307
nitroalkenes, selective reduction to enamides, 1605
nitroarenes, reaction with tris(benzotriazol-1-yl)-methyl anion and subsequent treatment with zinc bromide and hydrochloric acid yields *p*-nitroarylaldehydes *via* *p*-bis(benzotriazol-1-yl)-methylated products, 347
p-nitrobenzyloxymethyl, new fluoride removable protecting group for ribonucleoside 2'-hydroxyls, 981
nitroethene, sequential Michael and Henry reactions starting with *N*-benzyl L-serine methyl ester or serinol deriv, synth of nitropyrrolidines, 7599
N-[ω-(*p*-nitrophenoxy)alkyl]anilines, photoinduced through-bond electron transfer and rearrangement in, 505
p-nitrophenyl group for anomeric protection of oligosaccharides, selective oxidative cleavage *via* *p*-acetamidophenyl glycosides, 3343
2-nitropropane anion, consecutive $S_{RN}1$ reactions with 2,3-bis(chloromethyl)-1,4-naphthoquinone leading to the bis-*C*-alkylation product, 3323
6-nitroquinoxalines, 4- and 5-nitro-2,1,3-benzothiadiazole and -benzoselenadiazole, reaction with ethyl isocyanoacetate, dependence of product on base, 8391
β-nitro-tetrakis(*meso*-pentafluorophenyl)porphyrinato-Cu(I) derivs, synth, UV, cyclic voltammetry, 261
α-phenyl-β-nitrostyrene and β-nitrostyrene, reaction with Grignard reagents, synth of hydroximoyl halides or nitrile oxides, 6339
3,3,5,7-tetranitrooxindole and 3,5,7-trinitroindazole, formation by nitration of oxindole, 9263

Nitrogen heterocycles

adenine, use of the t-butyldimethylsilyloxymethyl group as a protecting group, 7833
bimanes, fluorescent compds, synth by Favorskii-like ring contraction of 1,3,4-oxadiazinone, 5039
by Diels-Alder reactions of aminoheterocycles with formaldehyde and electron-rich alkenes, 2615, 2619
1,3-diisopropyl-and1,3-ditertiobutyl-2,2,4,4-tetramethylcyclodisilazanes, flash vacuum thermolysis of, 3317
indoline 2,2-biscarboxylates, synth employing a tandem bis-alkylation strategy to cyclize the indoline heteroring from *N*-trifluoroacetamide and diethyl bromomalonate, 6965
poly(*N*-acryloylmorpholine) as a soluble support for the liquid-phase synth of oligonucleotides,

4761
Sch 42427/SM 9164, chiral azole antifungals, preparative chromatographic resolution and total asymmetric synth *via* enzymatic prep of chiral α-hydroxy arylketone intermediates, 611
see also Lactams, and the individual ring systems
Nitrogen oxides
cheletropic trapping of NO by a bisketene and a diene, ESR of nitroxides, 2113
deamination of aromatic amines by NO, 4165
nitration of ethyl linoleate by NO and O_2, 5773
nitrous oxide, formation from acyl nitroxyls with amines, generation of HNO, quantitative estimation of N_2O, 9287
Nitrones
asymmetric 1,3-dipolar cycloaddition to olefins catalysed by chiral phosphine-palladium complexes, synth of isoxazolidine, 5947
1-benzylpiperazin-2-one nitrone, synth from 4-(t-butyloxycarbonyl)piperazin-2-one, [3+2] cycloadditions with alkynes and alkenes to give Δ^4-isoxazolines and isoxazolidines, 7339
cyclic chiral nitrones constituting two diastereomers, synth by reaction of isonitroso Meldrum's acid with L-menthone *via* a nitrosoketene intermediate, 1801
cycloaddition to 1-acetylvinyl carboxylates, high regioselectivity, 6835
3-*O*-cyclohexenyl carbohydrate nitrones, diastereoselective synth of 9-amino-2,3,8-trihydroxyperhydrofuro[3,2-*b*][1]benzopyran derivs, 7635
diastereoselective intramolecular cycloaddition of nitrones to olefins, synth of perhydro-furo- and -pyrrolo[4,3,2-*cd*]1,2-benzisoxazoles, 841
1,3-dipolar cycloaddition of *N*-benzyl-*C*-carboxynitrone to various olefins, effect of added triethylamine on regioselectivity, 6157
generation and trapping of – and bis– from oximes, synth of symmetrically linked bi-isoxazolidines, 4597
spin trapping by 1,3,3-trimethyl-6-azabicyclo-[3.2.1]oct-6-ene *N*-oxide (trazon), ESR of nitroxide adducts, 5313
synth by methyltrioxorhenium catalysed direct oxidation of secondary amines, 6025
Nitrosamines
2-chloroethyl nitrososulfamides, convenient synth from *N*-(3-sulfamoyloxazolidin-2-ones, 5695
Nitroso compds
formation of amides, HNO and N_2O on generation of acyl nitroxyls in presence of amines, 9287
isonitroso Meldrum's acid, reaction with L-menthone, synth of cyclic chiral nitrones *via* a nitrosoketene intermediate, 1801
1,2-bis(*N*-methoxy-*N*-nitrosoamino)cycloalkanes thermolysis of, synth of 4,5-dihydro-1,2,3-triazole 2-oxides, 5997
N-nitroso and azido groups, intramolecular cyclisation of, synth of 4*H*-[1,2,3]triazolo[4,5-*c*]-[1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivs, 8577
nitroso carbonyl adducts, synth by oxidation of nitrile oxides by *N*-methyl morpholine *N*-oxide, synth of nitroso carbonyl adducts, 1909
1,3,5-trianilinobenzene, nitrosation on central ring, 4881
Nitroxides
formation by cheletropic trapping of NO by a bisketene and a diene, 2113
nitroxyl radicals derived from chiral oxazolidines, 7933
spin trapping by 1,3,3-trimethyl-6-azabicyclo-[3.2.1]oct-6-ene *N*-oxide (trazon), ESR of – adducts, 5313
NMR
3D-HMBC, technique for structural studies of complicated molecules, 8901
boron-11, proton, [8]-*m*-carboranophane, [9]dithia-*m*-carboranophane and [9,9]tetrathiadicarboranophane, 7221
carbon, COSY, 2-methylene-6-(4,8,12-trimethyl-3,7,11-tridecatrienyl)-3,7-epoxyheptanoic acid (rhopaloic acid A), norsesterterpene from marine sponge *Rhopaloeides* sp., 2265
carbon, 2:1 cycloadduct of [60]fullerene to cyanogen dioxide in chloronaphthalene mixture, 4137
carbon, *cis,cis,trans*-1,5,9-cyclododecatriene, dynamic NMR study, 4267
carbon, DNMR, fluxional properties of η^4-cinnamylideneaniline-tricarbonyl iron com-plexes, 6543
carbon, fluorine, monitoring of a S_NAr reaction on solid support, 4667
carbon, modification of the attached proton test ^{13}C NMR experiment, unambiguous peak assignments for carbons with large $^1J_{(CH)}$ values, 6623
carbon, proton, ^1H-^{15}N PFG HMQC, PFG HMBC, PFG-1D-ROESY, penigequinolones A, B, dihydroquinolinones from mould, 4961
carbon, proton, ^{31}P coupling, 1*H*-1,2λ^5-azaphosphinin-6-ones, 2841

carbon, proton, (^{13}C enriched), COSY, HMBC, nOe, andrastins A-C, C_{28} mould metabolites with steroidal framework, 1265
carbon, proton, agardhilactone, a novel oxylipin from the marine red alga *Agardhiella subulata*, 4635
carbon, proton, *N*-Boc *O*-benzyl protected proline oligomers, 6235
carbon, proton, of a [2.2](3,3')biphenylo(3,6)-phenanthrenophene, mixed [2.2]cyclophane, 3877
carbon, proton, calystegine B_1 (tetrahydroxynortropane) glucoside, 3207
carbon, proton, α-chiral carboxylic acids, 4737
carbon, proton, colletofragarones A1 and A2, conidial germination self-inhibitors of fungus, 5731, corrig. 8823
carbon, proton, COLOC, COSY, DEPT, NOE, acanthostral, an antineoplastic *cis,cis,cis*-germacranolide from *Acanthospermum australe*, 1455
carbon, proton, COLOC, COSY, NOESY, davidiol D from *Sophora davidii*, 5151
carbon, proton, COSY, DEPT, HMBC, HMQC, suberosenone, sesquiterpene from *Subergorgia suberosa*, 3259
carbon, proton, COSY, DEPT, nOe, penostatins, cytotoxic metabolites from *Penicillium* sp., 655
carbon, proton, COSY, DEPT, sapidolide A, tetrahydrofurano-lactone meroisoprenoid from *Baccaurea sapida*, 6791
carbon, proton, COSY, DQF-COSY, HMBC, HMQC, INADEQUATE, NOESY, sequithuriferol, α- and ß-duprezianene, tricyclic sesquiterpenes from *Juniperus thurifera* L., 3757
carbon, proton, COSY, DQF-COSY, TOCSY, spirolides E and F from the digestive glands of shellfish, 7671
carbon, proton, COSY, gigantransenins A-C, mono-THF acetogenins from the bark of *Goniothalamus giganteus*, 5449
carbon, proton, COSY, HMBC, of clathryimine, 3-phenyl-6,7,8,9-tetrahydroquinolizinium-4-carboxylate, 2389
carbon, proton, COSY, HMBC, HMQC, HOHAHA, NOESY, botryoxanthin A, carotenoid from the green microalga *Botryococcus braunii* Berkeley, structure, 1065
carbon, proton, COSY, HMBC, HMQC, NOESY, cephalotaxidene, dimeric alkaloid from *Cephalotaxus harringtonia* var. *drupacea*, 7053
carbon, proton, COSY, HMBC, HMQC, pectinoacetal-related sterols with cancer cell antiproliferative properties, isolation from gorgonian *Ctenocella* sp., 2959
carbon, proton, COSY, HMBC, HMQC, TOCSY, (−)-halicyclamine B, tetracyclic diamine from the sponge *Xestospongia* sp., 9151
carbon, proton, COSY, HMBC, nOe, sarcoglane, diterpene with tricyclo[7.5.0.$0^{10,14}$]tetradecane skeleton, 6909
carbon, proton, COSY, HMBC, nOe, Sch 65676 (fungal metabolite), 3943
carbon, proton, COSY, HMBC, nOe, zapanolide, 20-membered macrolide from *Fasciospongia rimosa*, 5535
carbon, proton, COSY, HMBC, NOESY, amphidinolide Q, cytotoxic macrolide from marine dinoflagellate *Amphidinium* sp., 1449
carbon, proton, COSY, HMBC, NOESY, apicidin, 8077
carbon, proton, COSY, HMBC, NOESY, curcapitoside, glycosyl-fused phenanthropyran from *Curculigo capitulata*, 4405
carbon, proton, COSY, HMBC, NOESY, geodisterol, 8145
carbon, proton, COSY, HMBC, nostocyclin, 3-amino-6-hydroxy-2-piperidone-containing cyclic peptide, 6725
carbon, proton, COSY, HMBC, ROESY, castavinols, glucoside polyphenol series from Bordeaux red wines, 7739
carbon, proton, COSY, HMBC, stellettadine A, acylated bisguanidinium alkaloid from *Stelletta* sp., 5555
carbon, proton, COSY, HMBC, symmetrical bicyclo[6.6.0]tetradecane resveratrol tetramer from stalks of *Vitis vinifera* (Vitaceae), 4697
carbon, proton, COSY, HMBC, Ypaoamide from the marine cyanobacterium *Lyngbya majuscula*, 6263
carbon, proton, COSY, HMQC, NOESY, TOCSY, neovibsanines A and B, tricyclic diterpenes from leaves of *Viburnum awabuki*, 6767
carbon, proton, COSY, HOHAHA, penaresidins A and B, sphingosine-derived alkaloids from Okinawan sponge *Penares* sp., 6775
carbon, proton, COSY, NOESY, of aceropterine, pseudopterane alkaloid, 2687
carbon, proton, cyclic compd composed of glucoses and biphenyl resulting from cleavage of glucose-wall of $6^A,6^D$-di-*O*-(*p,p'*-biphenyldisulfonyl)-ß-cyclodextrin by Taka-amylase A,

4035
carbon, proton, ß-cyclodextrin mono-3-*O*-(4-methylamino-3-nitrobenzylated), 8309
carbon, proton, DEPT, mono-6-hydroxy permethylated ß-cyclodextrin, 6831
carbon, proton, diimidazolyl dideoxy-ß-cyclodextrins, 7561
carbon, proton, dynamic – of stilbenes and tolans with 8-membered unsaturated 2,6-bridge, conformations, 4487
carbon, proton, FG-DQFCOSY, HMBC, HMQC, NOESY, ROESY, cholestane glycosides from *Ornithogalum saundersiae*, 1245
carbon, proton, fischerellin A, perhydro-3-(pyrrol-2-ylidene)pyrrole-2,4-dione with alkenediyne tail from cyanobacterium, 6539
carbon, proton, fluorine, (*Z*)-α,ß-difluorostyrenes, 7237
carbon, proton, grandone, nemorosone and hydroxynemorosone methyl ethers, polyisoprenylated benzophenones from floral resins, 6427
carbon, proton, halichlorine, 15-membered azalactone from sponge, 3867
carbon, proton, HBMC, angelmicin B, reduced naphthacenylnaphthacenequinone glycoside, 2785
carbon, proton, HBMC, dispacamides, bromopyrrole-imidazolone marine alkaloids, 3587
carbon, proton, HBMC, hyrtiomanzamine, ß-carboline alkaloid from sponge, 3457
carbon, proton, HBMC, laingolide, 15-membered aza-macrolide, 7519
carbon, proton, HBMC, neocryptolepine, biscryptolepine, neoquindoline, indolo[3,2-*b*]quinoline alkaloids and an artefact, 1703, corrig. 3217
carbon, proton, HMBC, COSY, plukenetione A, 2,4,9-trioxoadamantane deriv from natural source, 8663
carbon, proton, HMBC, HMQC, aurilide, cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia*, 6771
carbon, proton, HMBC, HOHAHA, pyoverdins, 3329
carbon, proton, HMBC, lagunapyrones A-C, cytotoxic acetogenins from unidentified marine sediment bacterium, 1327
carbon, proton, HMBC, neuchromenin, microbial metabolite from culture broth of *Eupenicillium javanicum* var. *meloforme* PF1181, 6363
carbon, proton, HMBC, NOESY, auripyrones A and B from *Dolabella auricularia*, 5151
carbon, proton, HMBC, NOESY, (+)-cavicularin, cyclic bibenzyldihydrophenanthrene deriv from *Cavicularia densa*, 4745
carbon, proton, HMBC, NOESY, of procyanidin A2 dimer, structure and conformation, 2015
carbon, proton, HMBC, phoeniceroside (2,2-bis-(5-methyl-4-(*O*-ß-D-glucopyranosyl)-3(2*H*)-furanone)-propane) from *Juniperus phoenicea*, 2955
carbon, proton, HMBC, preoleanatetraene, bicyclic triterpenoid hydrocarbon from *Polypodiodes formosana*, 4381
carbon, proton, HMBC, pupukeamide, linear tetrapeptide from mollusc, 8993
carbon, proton, HMBC, ROESY, blepharocalyxins A and B, diarylheptanoids, 7283
carbon, proton, HMBC, tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), 7135
carbon, proton, HOHAHA, ROESY, polysporins A-D from *Trichoderma polysporum*, 3039
carbon, proton, HOHAHA, ROESY, tetrapeptides containing the *E*-olefin isostere, 703
carbon, proton, INADEQUATE 2D, 3-hydroxypregnane-2,16-dione, 2-hydroxyandrosta-1,4-diene-3,16-dione, from wood, 7875
carbon, proton, lithium-6, silicon-29, 2D-HQMC, reaction of α,ß-bistrimethylsilylstyrene with lithium, dianion formation and Schlenk dimerization, 8719, 8723
carbon, proton, loloatin B, cyclic decapeptide, 7201
carbon, proton, nitrogen-15, PFG HMBC, HMQC, of agrocybenine, fungal pyrrolo[3,2-*b*]-pyridinone alkaloid, 4549
carbon, proton, nitrogen-15, of 2,4,6-trianilinonitrosobenzene, 4881
carbon, proton, [5'-^{13}C]nucleosides, 7757
carbon, proton, oscillatorin, cyclic decapeptide containing oscillatoric acid, unusual pyrroloindole amino acid, 6873
carbon, proton, paucidactine A and B, heptacyclic indole alkaloids, 3603
carbon, proton, pauciflorines A and B, pentacyclic indole alkaloids, 5765
carbon, proton, of pinnaic and tauropinnaic acids with 6-azaspiro[4.5]decane system isolated from mollusc, 3871
carbon, proton, of polycarpine and its dihydrochloride, marine imidazole disulfide alkaloid, 2369
carbon, proton, puupehenone and dipuupehe-

dione, sponge terpenoids, 3861
carbon, proton, tautomycetin, antifungal compd from *Streptomyces griseochromogenes*, 491
carbon, proton, tenuisines A-C, bisindole alkaloids with C_2 symmetry, 8811
carbon, proton, tricholomenyns C, D, E, dimeric dienyne geranyl cyclohexenones from fungus, 6223
carbon, proton, tridachiapyrone, 4a,5-dihydrochromone polypropionate from mollusc, 4259
carbon, proton, unsymmetrically substituted 2,4-diyne alcohols, 5023
carbon, shifts as measure of H-bonding between flavin and 2-/2,6-di-acylaminopyridines, 4435
carbon, solution structures of *cis*- and *trans*-1,7,9-trioxadispiro[5.1.5.3]hexadecane, 5461, 5465
carbon, thiouronium cyclodextrins, 4647
carbon, viburnols A-E, rearranged dammarane triterpenoids, 4157
COSY, HETCOR, NOESY, *cis,cis,cis,trans*-[5.5.5.5]-fenestranes, 7687
COSY, HOHAHA, nOe, proton, MTPA esters of keramaphidin B, 8203
fluorine, proton, tetrakis-*meso*-(2,3,5,6-tetrafluoro-4-X-phenyl)-2-Y-porphyrins (X = F or NMe_2, Y = H or NO_2), 5421
fluorine, use to monitor synthetic reactions in solid gel phase, 7649
HMBC, differentiation of HMBC two- and three-bond correlations for structure determination of natural products, 363
HMBC, nOe, hippospongic acid A, triterpenoic acid from marine sponge *Hippospongia* sp., 7765
HMBC, nOe, phenazostatins A and B, 8529
HMBC, NOESY, clausenamine-A and carbazomarin-A from stem and root bark of *Clausena excavata*, 7819
INEPT spectroscopy to determine orientation of the substituents on the 1,4-dioxane ring of xanthonolignoid 5′-demethoxycadensin, 2643
intermolecular ^{13}C-^{1}H nOe, study of differential hydration of *E*- and *Z*- conformers of t-butylformamide, 6569
long-range ^{13}C-^{1}H coupling constants, configuration and conformation of C5-C9 portion of maitotoxin, 1269
magic angle spinning NMR, monitoring the progress of reactions in solid phase synthesis, 4771
Mosher amides, expeditious synth using solid-supported carbodiimide, 7171
nitrogen-14, oxygen, of quinoxaline-2,3-diones and *N,N′*-disubstituted oxamides, substituent and conformation effects in 6,7-dinitroquinoxalinedione, 3191
^{15}nitrogen-HMBC to determine the orientation of the two steroidal units in ritterazine A, a cytotoxic dimeric steroid from the tunicate *Ritterella tokioka*, 1447
NOESY, ROESY, pinnatoxin A and D, macrocyclic toxins isolated from *Pinna muricata*, 4023, 4027
oxygen-17, study of H-bonding in calixarenes using, 5797
phosphorus, $^{1}J_{CP}$ couplings in phosphonate esters and salts, 3533
phosphorus, deoxyribonucleoside phosphoramidites, 331
phosphorus, 5′-*O*-(dimethoxytrityl)-4-*N*-benzoyl-2′-deoxycytidine-3′-*H*-phosphonate, 8621
phosphorus, phosphorofluoridate and phosphorofluoridothioate nucleoside diesters, 3537
phosphorus, solid-supported oligomers of phosphorodithioate ribonucleotides, 4451
phosphorus, trialkyl phosphites, 1087
proton, 2:1 complex of permethylated ß-cyclodextrin with *meso*-tetra-(4-carboxyphenyl)porphyrin Na salt in water, 8019
proton, 2D-ROESY, configurations of *O*-phosphonomethylene nucleoside derivs, 3497
proton, *N*-acetyl-α,ß-dehydrotryptophan ethyl ester, 3309
proton, analysis of reaction of tetraallyltin with aldehydes, synth of the corresponding homoallyl alcohols, 1905
proton, anisotropic effects in esters of 2-anthrylmethoxyacetic acid, absolute configuration, 4541
proton, anisotropy effects on CH_2 group in shielding region of pyridazine ring, 2825
proton, calix[4]crown ethers and chiral(1,3)- and (1,2)-calix[5]crown ethers, 1493, 1497
proton, chlorin-e_6 trimethyl ester, 8-de-ethyl-8-vinylmesochlorin-e_6 trimethyl ester and 8-de-ethyl-8-vinylchlorin-e_6 trimethyl ester, 5431
proton, compd from intermolecular reductive coupling of two monoformylcalix[4]arenes, 645
proton, cyclodextrin complexes with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, 7433
proton, 2,3-dimethylindole-5,6-quinone, 4241
proton DNMR of calix[8]arene double-bridged by *m*-xylylene units, 1621

proton, dynamic – of cyclic oligomers (n = 3-6) of *N*-methyl-*m*-aminobenzoic acid, conformations, 5003
proton, effect of solvent on spectrum of a tetra-acid prone to H-bonding aggregation, 2327
proton, mixed furano-naphthalenophane with CMe_2 groups separating FNFFFN and FFNF-FN in cyclic array, conformational mobility, slow inversion in 1,4-epoxy-1,4-dihydronaphthalene precursors (benzyne adducts), 6201, 6205
proton, nephilatoxin 1–6, polyamine toxin from *Nephila clavata*, 7099
proton, nOe, carbapseudopentose moieties of hopanoids of the bacterium *Zymomonas mobilis* and the cyanobacterium *Anacystis montana*, 1791
proton, nOe, DQF-COSY, conformation of 4,8-dimethyl-2-phenyl-1-oxaspiro[2.5]octane, 8447
proton, nOe effects in apoprotein-bound cyclized C-1027 chromophore, 4997
proton, nOe, methyl (2*Z*,6*R*,8*R*,9*E*)-3,6-epoxy-4,6,8-triethyl-2,4,9-dodecatrienoate, 6681
proton, 6,5 open and 6,6 closed cycloalkylidene-fullerenes, 4651
proton, optically active naphthyl viologens in D_2O, association effects, 3149
proton, palauolol, sesterterpene from sponge *Fascaplysinopsis* sp., 3951
proton, [2.2]paracyclophanes with amino and carboxy groups in different rings, 1273
proton, phosphorus, of 1,3-di-t-butyl-2-chloro-1,3,2-diazaphosphole, ionic (phosphenium cation) character indicated, 9025
proton, silicon, dynamic, of 7-(dimethylamino-methyl-1,2,2-trimethyl-2-phenyl-2-azonia-1-sila indane cations and related compounds, 845
proton, stereochemistry of hydrogen migration from C-24 to C-25 during biomethylation in ergosterol biosynth, 1339
proton, structures of bridged calix[6]arenes bearing a bromide functionality in the cavity, 4039
proton, study of [2+2]retrocycloaddition of 4,5,10,11-tetramethylheptacyclo[8.2.1.$1^{2,5}$.$1^{4,7}$.$1^{8,11}$.$0^{1,8}$.$0^{2,7}$]hexadecane to an isomeric diene, 8601, 8605
proton, tetra- and penta-substituted pyrroles, 2943
proton, *meso*-tetraaryl porphyrin analogues with one thiophene and/or furan ring; also with 2,4-disubstituted pyrrole ring, synth, 197, corrig. 1521
proton,1,2,3,4,5,6,6a,7,8,9,10,11,12,12a-tetradeca-hydrochrysene-5,6,11,12-tetracarbonitrile, 1559
proton, 2-(2,3,7,13-tetrahydroxyoctadecanoyl-amino)ethanesulfonic acid, 6347
proton,3,7ß,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene and intermediates in synth, 1527
proton, tropiporphyrin, a cycloheptatrienyl porphyrin analogue, 8825
proton, variable temperature, solution studies of *p*-t-butyloxocalix[4]-, [5]-, and [6]arenes, synth *via* the corresponding CO-bridged acyclic analogues, 5959
pulsed-field-gradient HMBC, application to structure determination of benzo[*c*]phenanthridine alkaloid pseudobase dimers, 1655
relaxation rate study of rates of complexation in the three-point recognition of dimethyl aspartate by a bis(2,7-dihydroxy-1-naphthyl) zinc porphyrin, 5369
use of Pirkle's reagent to demonstrate chirality of calix[8]arenes with two crossing polyether chains, 7627
using a chiral anisotropic reagent, methoxy-(2-naphthyl)acetic acid, absolute configuration of yessotoxin, 7087

Nomenclature
apiananes, novel C_{23} terpenoids with perhydro-pentaleno[2,1-*a*]naphthalene skeleton from *Salvia apiana*, 4213

Nozaki-Hiyama reactions
reaction of allyl bromides with aldehydes mediated by chromium(II) chloride, synth of *syn*-4-alkoxyalkan-1-ols, 5487

Nucleic acids
cleavage by 10-membered masked oxaenediyne analogue, 2433
oligomers containing a *N*-2-hydroxyethyl-amino-methylphosphonate backbone, a novel PNA analogue, synth, 7857
oligonucleotides with alternating anionic and cationic phosphoramidate linkages, synth, binding to DNA and RNA, 743
peptide nucleic acid with alternating D-homo-alanyl adenine/L-alanyl thymine building units, formation of a self-pairing double strand, 475
peptidic nucleic acid dimer containing guanine and adenine, liquid phase synth, 1413

Nucleic acid analogues
base-pairing in double-stranded – formed from oligo-nucleotides covalently linked to acridine at artificial abasic site, influence of linker

length and base sequence, 4983
5-phosphono-linked thymine dinucleotides, incorporation into oligonucleotides, 6457
phosphorodithioate RNA, synth by H-phosphonothioate method on solid support, 4451
Nucleosides
acyclic nucleoside phosphonic acids in the purine and pyrimidine series, prep *via* Michael addition, 4701
adenophostin A, tetraphosphorylated disaccharide – with IP_3 receptor agonist properties, synth, 3599
adenosine-5′-*N*-ethyluronamides with modified 6-amino group, synth, 1567
α-alkoxy-α-fluoromethanephosphonates, synth and incorporation into acyclic phosphonate –, 8975
trans,trans-4-aryl-2,3-oxetanedimethanols, analogues of the antiviral nucleoside oxetanocin A, synth starting from *E*-2-bromo-1,3-pentadiene, 7667
C-arylated –, synth from corresponding iodo– by zincation and Pd-catalyzed cross-coupling, 8375
4′-aza-2′,3′-dideoxythymidines, isoxazolidine-derived aza–, synth from 1-vinylthymine, 1277
bicyclic nucleosides related to 6-azaisocytosine, 901
bredinin, imidazole – antibiotic, synth of 2′-deoxy and 5′-phosphate derivs, 187
carbocyclic, synth of precursors by functionalization of cyclopentadiene-Boc-NO cycloadducts, 3799
crown – monophosphate diesters, prodrugs with anti-HIV activity, 3101
cyclic sulfite group as epoxide surrogate in synth of carbocyclic –, 2353
1-deoxy-1-*C*-(*p*-aniline)-ß-D-ribofuranose, synth from 1-bromo-4-lithiobenzene and D-ribono-1,4-lactone, incorporation into ribozymes using the solid phase phosphoramidite procedure, 6973
2′-deoxy-5-ethyl-4′-thiouridine and D- and L-3-*O*-carbamoyl-2-deoxy-4-thioribosides, synth using acyl carbamate directing groups, 1867, 1871
5′-deoxy-5′-iodomethylthymidine, synth, 1591
2′-deoxynucleoside for incorporation in triplex-forming oligodeoxynucleotides selectively binding to the A.T. base pair, synth by azidophenylselenylation reaction of 6-vinylpurine substrate, 8857
5′-*O*-(dimethoxytrityl)-2′-deoxynucleoside derivs, conversion into 3′-*H*-phosphonates using ammonium aryl *H*-phosphonates, 8621
functionalised nucleosides by stereocontrolled enolate addition on thymidine C-5′ aldehydes, incorporation into oligonucleotides, 4689
2′,3′-fused γ-butyrolactone-nucleosides, synth and coupling with 5′-amino-nucleosides to give amide-linked nucleotide-dimer analogues, 3921
2′-hydroxyethylcyclopropyl carbocyclic nucleosides from D-mannitol, 8849
imidazo[1,2-*a*]pyridine *C*-nucleosides, synth by coupling reaction of 2,6-dichloro-3-iodoimidazo-[1,2-*a*]pyridine and 2,3-dihydrofuran, 6275
L-isomers and modified D-guanine analogues of anhydrohexitol nucleosides, synth and antiviral activity, 8147
5-isoxazolidinyl thymine and cytosine as – analogues, enantioselective synth, 4877
– methylphosphonate methyl ester diastereomers, synth from mixed dibutylphosphino-thioic-phosphonic anhydride, 4853
miharamycin B, nucleoside antibiotics produced by *Streptomyces miharaensis*, synth of the northern part from methyl 2,3,4-tri-*O*-benzyl-α-D-gluco-hexodialdo-1,5-pyranoside, 4003
p-nitrobenzyloxymethyl as protecting group for the 2′-hydroxyl of ribonucleosides, 981
non-protected thymidine or carbohydrates, phosphorylation at the primary alcohol of by hydrogen phosphonate, synth of 6-(mannopyranosyl), 6-(glucopyranosyl) or 5′-(thymidinyl)-phosphodiesters, 5123
novel – by intramolecular functionalization of 2,2′-anhydrouridine derivs, 1995
[5′-^{13}C]nucleosides, synth from D-[5-^{13}C]ribose, 7757
oligo– methanephosphonates, elimination of transamination side products by use of dC^{Ac} methanephosphonamidite, 8691
3′-phosphonate analogues of 2′,3′-dideoxynucleosides, synth from ß,γ-epoxyphosphonate, 4297
2′,3′- and 3′,5′-*O*-(1-phosphonoalkylidene) – derivatives, synth from nucleoside orthoesters, configuration by NMR, 3497
– phosphorofluoridate, phosphorofluorido-thioate and -dithioate monoesters, synth, 5739
phosphorofluoridate and phosphorofluoridothioate nucleoside diesters, 3537
2′-*O*-phosphorylated ribonucleosides incorporated into oligonucleotides, synth and structural and thermodynamic properties of, 6741
pteridine analogues of adenine –, synth, 8355

pyrimidine trinucleoside containing a conformationally restricted ribose moiety and two 2',5' formacetal internucleoside linkages, synth, 941
ribonucleoside monophosphates, transport through liquid organic membranes using a carrier mixture of lipophilic boronic acid and bis(quaternary ammonium cation), 6303
6(8)-1' spiro-bridged –, 1,5-translocation and closure of radicals derived from 6(8)-(dibromovinyl) derivs, 2801
sulfomethyl – analogues, isobutyl esters for protection of sulfonyl groups, 4443
thietane – by application of Pummerer reaction, 7569
towards 2',3'-dideoxynucleoside "libraries"; 3'-alkylthio analogues from an αß-unsaturated aldehyde, 7619
tricyclic carbazole-like 2'-deoxycytidine analogue, synth *via* Stille biaryl coupling on 5-iodo-2'-deoxyuridine followed by cyclisation, 5057
2',3'-unsaturated pyrimidine – by direct glycosylation of bistrimethylsilyluracil by 1-phenylthio-2,3-dideoxy-2,3-didehydroribose, 6133
uracil polyoxin C, synth from uridine, 163

Nucleotides

amide-linked nucleotide-dimer analogues by coupling of 2',3'-fused γ-butyrolactone-nucleosides with 5'-amino-nucleosides, 3921
aryl nucleoside H-phosphonate diesters, transesterification, new method of internucleotide bond formation, 4561
biotin and fluorescein labelling of biomolecules by active esters of 1-phenylpyrazolin-5-ones, 4313
5'-*C*-branched thymidines, synth, stereochemistry, incorporation into oligodeoxy–, enzyme stability data, 2739
5'-deoxy-5'-methylidyne phosphonate linked thymidine oligonucleotides, synth and preliminary biochemical studies, 6239
1,2-di-*O*-cyclopentylidene-5-isopropylamino-D-xylofuranose as chiral auxiliary for dinucleotide phosphorothioates, 973
5-formyluracil-containing oligonucleotides, synth, properties, 9067
5-halouracil-containing oligonucleotides, photoirradiation of, evidence for intrastrand C2'-hydrogen abstraction by using stereospecifically C2'-deuterated deoxyadenosine, 1805
heterochiral dodecadeoxynucleotides containing an unnatural L-enantiomer of D-deoxyribose, synth and investigation of their thermodynamic stability for duplex formation, 5551
hexafluoroacetone acetal inter– link in T-T analogue, incorporation into oligo–, 8667
methidium intercalator phosphoramidite incorporation into an oligonucleotide, 8467
methyl substituted C-5 propyne and C-5 thiazole oligodeoxynucleotides, RNA duplex formation by, 3959
NADH model compds by reaction of a pinyl substituted Hantzsch ester with dimethylaluminium amide, subsequent reduction of methyl benzoylformate with these models yielded both enantiomers of methyl mandelate, 3275
nucleotide carrier mixture with transport selectivity for ribonucleoside-5'-phosphates, 6303
oligo- analogue containing a glucose-derived conformation-restricted ribose moiety and 2',5'-formacetal linkages, synth and hybridization properties, 941
oligo- bearing a tricyclic 2'-deoxycytidine analogues, hybridisation properties of, 5057
oligo- containing 2'-azido- and 2'-amino-2'-deoxyuridine, synth using phosphotriester chemistry, 3227
oligo- containing 2'-methoxyoxalamido-2'-deoxyuridine, synth and use a precursor for introduction of various functional additives, 3231
oligo- containing 2'-*O*-phosphorylated ribonucleosides, synth and structural and thermodynamic properties of, 6741
oligo- covalently linked to acridine at artificial abasic site, influence of linker length and base sequence, 4983
oligo- incorporating an N^2-(3-aminopropyl)deoxyguanosine, synth, binding properties and conjugation chemistry, 7675
oligo-, liquid-phase synth of using poly(*N*-acryloylmorpholine) as a soluble support, 4761
oligo-, replacement of the phosphodiester linkage by an acetylenic bond, comparison between carbon-, sulfur- and oxygen-containing analogues, 5511
oligo- synth using *p*-nitrobenzyloxymethyl as protecting group for the 2'-hydroxyl of ribonucleosides, 981
oligo- with alternating anionic and cationic phosphoramidate linkages, synth, binding to DNA and RNA, 743
oligo- with cholesteryl groups tethered near to one or both termini, binding to liposomes, informational liposomes, 6243
oligodeoxynucleoside phosphorodithioates,

chemoselective coupling on solid phase using PyNOP and PyFNOP, 8041
oligodeoxyribo- synth *via* the phosphoramidite approach using the 4-cyano-2-butenyl group as a protecting group, 6643
N-pent-4-enoyl oligo–, thiophosphoryl oligo– and phorphoramidoyl oligo–, synth on polymer support by H-phosphonate method, 1539, 1543
5-phosphono-linked thymine dinucleotides, synth, 6457
3′-phosphoryl-*O*-tyrosine-terminated oligo-, synth on CPG and TentaGel matrices, 3093
photoisomerizable linker containing an azobenzene unit for connecting oligo- segments, synth, 637
purine nucleoside acyldiphosphates and acyltriphosphates, synth, 8739
synth of – containing 4′-C-substituents (methoxymethyl, aminomethyl), incorporation into oligo–, 6515
3′-thiouridylyl-(3′→5′)-uridine, synth, hydrolysis rates, 925
thymidyl-thymidine phosphorothioate, *O*- and *S*-protected by β-silylethyl groups, 1999
triplex-forming oligodeoxynucleotides selectively binding to the A.T. base pair, synth of 2′-deoxynucleoside for incorporation into – by azido-phenylselenylation reaction of 6-vinylpurine substrate, 8857
universal allyl linker for poly– solid-phase synth, 3789

Olefination
desulfurization of sultones with simultaneous methylenation, 3841
of 1,2-diketones, synth of 4-hydroxy-cyclopent-2-en-1-ones, 1899
Julia-Lythgoe –, advantageous use of DME as solvent in addition of metalated sulfone to aldehydes and ketones, 5283
Julia-Lythgoe olefin synth from ketones, requirement for SmI_2, 2089
of Boc-phenylalanine methyl ketone, prep of γ-methyl-*E*-olefin Phe-Gly isosteres, conformational behaviour of four tetrapeptides containing the isostere, 703

Olefins
2-(acetoxymethyl)-1,1-difluoro-3-(trimethylsilyl) prop-1-ene, preparation and uses, 5401
1-alkoxymethyl-2-aryl-1-t-butyl-2-methoxyethylenes, 1,2-addition of singlet oxygen yields the corresponding 1,2-dioxetanes, 397
allylic acyloxylation by t-butyl perbenzoate, $Cu(OTf)_2$/DBN or DBU as catalyst of Kharasch reaction, 8435
allylic oxidation of – with copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands, synth of optically active allylic benzoates, 2633
γ-amino olefins, synth by ring-opening of *N*-tosyl phenylaziridines with allylsilanes in the presence of $BF_3.Et_2O$, 8493
2-bromo-1,1-difluoro –, synth from trimethyl trithioorthoesters, 7983
captodative – 1-acetylvinyl carboxylates, high regioselectivity of cycloaddition to 1,3-dipoles, 6835
chiral Mn(III)-picolinamide-salicylidene complex for asymmetric epoxidation of –, 2725
chlorination and bromination using peroxysulfate and sodium halide, 2377
cyanohydroxylation, use of mercury(II) fulminate and Li salts, 1165
(*E*)- and (*Z*)-1,2-difluoroethenyl stannanes, stereospecific synths, 1921
difluoroolefins by Wadsworth-Emmons reaction involving lithium difluoromethylenephosphonate, 5881
1,1-difluoroolefins, synth from carboxylic acids *via* α,α-difluorothioethers, 3223
(*Z*)-α,β-difluorostyrenes, synth by Pd-catalyzed coupling of difluoroethenezinc iodide with aryl iodides, 7237
2,2-difluorovinyl zirconocene, synth and use in cross-couplings, 8799
dihydroxylation of – by t-BuOOH catalyzed by β-cyclodextrin borate, 3581
dihydroxylation of – containing thio functions, conditions for AD-mix or OsO_4/ferricyanide hydroxylation without *S*-oxidation, 4427
2-(dimethylphenylsilyl)alk-3-en-1-ols,asymmetric induction in –, 1205
Z-disubstituted olefins by Still-Wittig rearrangement of stannylated methyl (*E*)-allylic ethers having an aliphatic side chain, 389
electron-deficient olefins, intermolecular radical additions of 2,3-*cis*-disubstituted 1,1-dibromo- and 1-bromocyclopropanes to, 1837
enantioselective epoxidation of functionalised and unfunctionalised – using *m*-chloroperbenzoic acid in liposomised form, 4751
epoxidation of – catalysed by WO_4^{2-}-exchanged LDH, 8557
exocyclic olefinic esters by treatment of bicyclic and tricyclic ketones with lithium ethynyl

acetylide followed by addition of a catalytic amount of CSA or *p*-TSA, 8109
fluoroolefin synth from 2-arylimino-3,3,3-trifluoropropanoates and organometallic reagents, 2045
gas-phase ozonolysis of alkenes, formation of secondary ozonides, 9297
hydrogenation of – using $NiCl_2.2H_2O$/Li/naphthalene, 6925
ledene and aromadendrene, rearrangement in superacidic media, conversion into compds with the natural cubane skeleton, 2631
medium-ring lactones, reaction with unstabilized phosphonium ylids, formation of olefinic alcohols, 3853
– metathesis, cyclization of diallyl sulfide to 2,5-dihydrothiophene using Mo alkylidene catalyst, 9373
metathetical cross-coupling of terminal – with allyltrimethylsilane, synth of allylsilanes, 2117
methoxy-selenenylation of allylic alcohols and derivs, stereochemistry, 1249
γ-methyl-*E*-olefin Phe-Gly isosteres, synth by olefination on Boc-phenylalanine methyl ketone, conformational behaviour of four tetrapeptides containing the isostere, 703
molrac olefins and platform systems which incorporate the 1,4-benzoquinone chromophore, cycloaddition approach, 2157, 2161
Ni-catalyzed hydrovinylation of styrenes, synth of 3-aryl-1-butenes, 1157
nitration of ethyl linoleate by NO and O_2, 5773
o-benzyloxy- and -allyloxy styrenes, intramolecular alkylation of alkyllithium adducts, synth of *o*-substituted phenols, 4209
olefinic esters, tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions of, synth of 1-hydroxybicyclo[n.1.0]alkanes, 1849, corrig. 6959
ortho-condensed six-, seven-, eight- and nine-membered rings with one O atom and one double bond by thio-annulation and Ramberg-Bäcklund reaction, 2865
osmium trichloride-catalysed oxidation of – with peracetic acid, synth of α-ketol amino acid precursors, 3333
oxidation of steroidal – to enones using $RuCl_3$/t-BuOOH, 3429
palladium(0) catalysed intermolecular reaction with electron deficient alkylidene cyclopropanes, synth of functionalised skipped diene units, 5983
participation in asymmetric chloral-ene reaction using chirally poisoned racemic Ti catalysts, 3449
phenyl substituted fluoro-olefins by reaction of the anion, derived from diethyl α-fluorobenzyl phosphonate and lithium diisopropylamide, with aldehydes and ketones, 629
radical additions to – in the presence of iodobenzenediacetate, synth of alkyl dithiocyanates, 1889
reaction with ethyl diazoacetate in the presence of $[OsCl_2(p\text{-cymene})]_2$, synth of cyclopropanes, 1025
– reduction using borane and diimide, synth of dihydro-B-nortestosterone and its 17α-methyl deriv, 6221
seven membered cycloolefin, synth by solid phase ring-closing metathesis in a cyclisation/cleavage strategy, 8249
stereospecific synth of (*Z*)- and (*E*)-stilbenes by crown ether catalyzed Wittig reactions in solid-liquid two phase system, 4225
substituted olefins by alkenylation of organomanganese reagents in the presence of Fe $(acac)_3$, 1773
symmetrical *Z*-olefins from phosphonium salts *via* an autoxidation process, 7703
unfunctionalised olefins, enantioselective epoxidation of using a polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst, 3375
unprotected olefinic carboxylic acids, direct epoxidation of using $HOF.CH_3CN$, 531
see also Alkenes

Oligomerisation
cyclotrimerization of mono- and bis-trifluoromethylacetylene using dirhodium catalysts, 6097

Oligomers
N-alkylcarbamate –, solid-phase synth, 5653
N-Boc *O*-benzyl protected proline oligomers, conformational stability of, 6235
containing a *N*-2-hydroxyethyl-aminomethylphosphonate backbone, a novel PNA analogue, synth, 7857
cyclic amide – (n = 3-6) of *N*-methyl-*m*-aminobenzoic acid, synth, conformations, 5003
cyclic hydropyran oligolides, synth by macrolactonisation of tris(hydropyran) hydroxy acids or by cyclooligomerisation of bis- or tris(hydropyran) seco acids, 343
davidiol D, the first natural resveratrol pentamer, isolation from *Sophora davidii*, 5151
a decahydrohexapyrrin, synth of model PBG-de-

aminase-bound intermediate to uroporphyrinogen III, 763
linear quinine oligomers, synth and kinetic cyclisation of, 6013
23mer oligomer containing 8-oxo-7,8-dihydro-6-*O*-methyl-2'-deoxyguanosine, synth from 2'-deoxyguanosine and use as a probe to study DNA-base excision by MutY enzyme, 9
oligopyridines, stepwise addition of polyalkyne groups, 2011
optically active, axially chiral binaphthol-based oligomers, synth *via* Hay's coupling from the corresponding monomer, 2979
thienylidenevinylene – end-capped with 1,3-dithiol-2-ylidene groups, cyclic voltammetry, UV/vis spectra, 6121

Oppenauer reactions
Meerwein-Ponndorf-Oppenauer reaction of aldohexopyranose induced by air-oxidised samarium diiodide, conversion to ketohexopyranose, 5987

Orbital effects
free energies of hemiacetal formation in aqueous solution between alcohols and acetaldehyde, chloral, and fluoral, effect of $n \rightarrow \sigma^*$ interactions, calculated by AM1 and Insight II, 9279

Organoleptics
see Flavours and fragrances, Pheromones

Orthoesters
oxidative desulfurization-fluorination of trimethyl trithioorthoesters, formation of β-bromo-α,α-difluoroalkyl methyl thioethers, partially fluorinated olefin synth, 7983

Osmium and compds
$[OsCl_2(p\text{-cymene})]_2$ as catalyst for the cyclopropanation of olefins with ethyl diazoacetate, 1025
osmium-catalysed oxidation of olefins and dihydroxylation of allenes, synth of α-ketols, 3333, 3335
see also Hydroxylation

Osmylation
for asymmetric dihydroxylation *see* Hydroxylation

Oxadiazines
1,3,4-oxadiazinone, Favorskii-like ring contraction to a bimane, 5039

Oxadiazoles
substituted 1,2,4-oxadiazoles, synth by condensation of the corresponding amidoxime with carboxylic acids in the presence of a peptide coupling reagent in diglyme, 6627
4*H*-[1,2,3]triazolo[4,5-*c*][1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivs, synth *via* intramolecular cyclisation of *N*-nitroso and azido groups, 8577

1,2,3-Oxadiazoles
see Sydnones

Oxadiazolidines
1,3,4-oxadiazolidine, 1,3-dipolar cycloreversion of, generation of azomethine imines, construction of pyrazolidine heterocycles, 4323

Oxazepines
4,7-dihydro-1,3-oxazepin-2(3*H*)-ones, by ring expansion of 3,6-dihydro-2*H*-1,2-oxazines using $Co_2(CO)_8/CO$ at 1000 psi, 2713

Oxazines
6-acetoxy-5,6-dihydro-4*H*-1,3-oxaziniumperchlorates, synth by cyclisation of *N*-3-oxoalkylamides, subsequent reaction with sodium hydrosulfide results in *N*-3-oxoalkylthioamides, 5203
3,6-dihydro-2*H*-1,2-oxazines, ring expansion to 4,7-dihydro-1,3-oxazepin-2(3*H*)-ones by $Co_2(CO)_8/CO$ at 1000 psi, 2713
1-methoxy-1*H*-phenanthro[9,10-c][1,2]oxazine by reaction of 10-(methoxyimino)phenanthren-9-one with benzoylmethylene(triphenyl)phosphorane, reaction with dienophiles gives triphenylene-*o*-dicarboxylates, 1097
morpholine-2,3-diones from 2-aminoalcohols *via* DMAD adducts, 4217
(phosphino-1,3-oxazine)palladium catalyst for enantioselective allylic substitution, 9143
4-silyloxy-1,3-oxazin-6-ones, generation and reaction with acetylenic esters and enamines, synth of 2-pyridones, 4973, 4977

Oxaziridines
camphorsulfonyl oxaziridines as starting materials for prep of 2',4'-difluoro-(*R*)-2-hydroxypropiophenone, a key intermediate to Sch 42427 and ER-30346 antifungals, 8117
α-hydroxy esters, stereospecific synth using Davis's –, 7473

Oxazoles
almazole D, antibacterial 2,5-disubstituted oxazolic dipeptide from a delesseriacean seaweed of Senegal, structure, 3049
methyl (4*R*,5*R*)-4,5-dihydro-5,5-(disubstituted)-4-oxazolecarboxylates, synth by diastereoselective aldol reactions of prochiral ketones with methyl isocyanoacetate, 7845
2-substituted oxazoles, synth by thermolysis or photolysis of 2-acylisoxazol-5-ones, 675

1,2-Oxazoles
see Isoxazoles

Oxazolidines/oxazolidinones

3-acryloyl-1,3-oxazolidin-2-one, Diels-Alder reactions with cyclopentadiene in the presence of catalytic amounts of (*R*)-2,2′-isopropylidene-bis(4-phenyl-2-oxazoline) and magnesium perchlorate, 3027

acyloxazolidinone enolate, hydroxylation of, key step in synth of (1*S*,2*R*)-imidazoleglycerol, 9259

N-acyloxazolidinone enolates, reaction with α-keto esters, synth of 2-hydroxy-2,3-disubstituted succinate derivs, 8263

2-benzoyl-3,4-dimethyl-5-phenyl-1,3-oxazolidines, synth by reaction of L-ephedrine with phenylglyoxal, spontaneous rearrangement to 4,5-dimethyl-3,6-diphenylmorpholin-2-one, 8223

bicyclic oxazolidine, precursor for piperidines and indolizidines, synth from (*R*)-phenylglycinol and conversion to (2*S*,3*S*)-3-hydroxypipecolic acid, 4001

chiral – as auxiliary in synth of tetrahydropyran-containing C18-C30 core of phorboxazoles by enol borinate aldol method, 6449

Co-mediated alkylation of acetoacetyl benzyloxazolidin-2-ones, enantioselective synth of glycines with bulky substituents, 6197

diastereoselective alkylation of enolate dianion of (*S*)-4-carbethoxymethyl-2-oxazolidinone, 5723

fusarentin methyl ethers, 3-alkyl-3,4-dihydro-6,7,8-trioxy-isocoumarins, enantioselective synth using 3-acyl-2-oxazolidinone enolate alkylation, 8053

N-(isohex-2-enoyl)-4-phenyloxazolidin-2-one, highly hindered β-arylisohexanoic acid derivs by asymmetric Michael additions, 7817

β-keto phosphine oxide oxazolidine, reduction of and reaction of an oxazolidine aldehyde with a lithiated phosphine oxide, synth of *S* or *R* β-hydroxy phosphine oxides, 3051

N-methylation of β-amino alcohol by $NaBH_3CN$ reduction of derived *N*-Boc-oxazolidine, 6557

nitroxyl radicals derived from chiral oxazolidines, 7933

oxazolidin-2-one bonded from chiral position 4 to resin *via* $-CH_2OCH_2C_6H_4-$ link, use in synth of (*S*)-2-methylhydrocinnamic acid, 8023

oxazolidin-2-ones, ring-opening by amines catalyzed by $AlCl_3$, 1217

oxazolidine derived from reaction between a keto-acid and (*R*)-(−)-phenylglycinol, conversion to *cis* or *trans*-1,3-disubstituted tetrahydroisoquinolines, 4369

1,3-oxazolidine- and thiazolidine-2-thiones, synth by hetero-1,3-dipolar cycloaddition of dithiolane-isocyanate iminium methylides, 711

oxazolidine-2,5-diones (α-aminoacid *N*-carboxyanhydrides), synth from *N*-carbamoyl aminoacids with NO/O_2, 9043

oxazolidine-2-thiones, synth from alkenes by Co(II)-catalyzed oxidation and trimethylsilyl isothiocyanate reaction, 7315

oxazolidinone approach to α-substituted lactam dipeptide isostere, 4319

4- and 5-oxazolidonecarbaldehydes, addition of organocerium reagents to, synth of *syn*- and *anti*-alcohols, 6677

N-(9-phenylfluoren-9-yl)-alanine oxazolidinone, reaction with organolithium reagents, synth of α-amino ketones and alcohols, 3403

4-phenyloxazolidin-2-ones as chiral auxiliary in synth of of β-isopropylphenylalanines, 1563

silyloxy-Cope rearrangements of chiral aldol adducts on an oxazolidinone template, 4471

N-(3-sulfamoyloxazolidin-2-ones, convenient decarboxylative ring opening to 2-chloroethyl nitrososulfamides, 5695

tricarbonyl[η^6-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium, cyclisation of, synth of isoindoline, 3307

Wacker amino carbonylation of unsaturated amides, synth of 2-oxooxazolidin-4-ylacetic esters, 7287

Oxazolines/oxazolinones

2-substituted oxazolines by Pd-mediated cross-coupling of aryl, alkenyl and alkynyl stannanes with chiral 2-bromo oxazolines, 1743, 1747

5-alkynyl-2-oxazoline derivs, synth by addition of nitrile oxides to cobalt-coordinated 1,3-enynes, 4341

bis-oxazoline ligands for asymmetric Cu-catalyzed cyclopropanation and aziridination of olefins, 6189

bis(*o*-diphenylphosphino-oxazolin-2-yl)ferrocenes, chiral ligands for Pd-coordination in allylic substitutions, 4545

chiral bis-oxazolines, synth from D- and L-diethyl 2,3-*O*-isopropylidene tartrates and chiral amino alcohols, use as ligands in cyclopropanation of olefins, 4073

chiral bis(oxazoline)-Cu(II) complexes as catalysts for enantioselective Mukaiyama-Michael reactions of 2-carbomethoxy cyclopentenone, 8921

chiral 1,1′-di(2-oxazolinyl) ferrocenes, effect of solvent and lithiating agent on stereoselectivity

in diphenylphosphino group introduction, 6137
chiral indane-derived C_2-symmetric bis(oxazolines), synth using Ritter reaction, 813
chiral ω-aminoalkyloxazolines, asymmetric α-alkylation of, synth of enantiomerically pure ω-amino acids, 359
copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands as catalysts for synth of optically active allylic benzoates from olefins, 2633
2-(β-cyanoalkyl)oxazolines, reduction to cyclic amidines, synth of (*S*)-4-methylpyrrolidin-2-one from (*R*)-phenylglycinol derived oxazoline, 3993
cyclodidemnamide, 21-membered cyclopeptide containing trisubstituted 2-oxazoline ring, synth, 9111
indane-derived C_2-symmetric bis(oxazoline)s in two-point binding asymmetric Diels-Alder reactions of acrylimide and cyclopentadiene, 1725
(±)-indolmycin, 4-oxooxazolin-5-ylethylindole deriv, synth, 6447
oxazolines by cyclodehydration of β-hydroxy amides and thioamides using PEG-supported Burgess reagent, 4659
oxazolinyl oxiranes derived from treatment of 4,4-dimethyloxazolinylchloromethyllithium with aldehydes, deblocking of provides α,β-epoxy aldehydes, 4777, 4781
2-propylenebis-(2-oxazoline) and 2,6-di(-2-oxazolinyl)pyridine, Cu(II) and Zn(II) complexes as catalysts in Diels-Alder and aldol reactions, enantioselection comparison, 7481
ruthenium complexes of chiral phosphinooxazolines as catalysts for enantioselective transfer hydrogenation of alkyl aryl ketones, 1381
3a,4,5,7a-tetrahydrobenzoxazole derivs from homochiral 4-benzamido 2-cyclohexenone involving methylene-addition to the carbonyl and intramolecular oxirane-ring opening, 4059

Oxazolones

4-arylmethylene-oxazol-5-ones (azlactones), use as arylacetaldehyde equivalents in Pictet-Spengler synth of tetrahydro-β-carbolines, stereochemistry, 5813
crystallization-induced dynamic kinetic resolution of dipeptide-derived 5(4*H*)-oxazolones, 6575
cycloalkenylmethyleneoxazolones, synth by intermolecular transfer of an alkenyl group in enamines, subsequent cyclisation to [*b*]-fused pyridines, 8871
münchnone (mesoionic oxazol-5-one) intermediate in Ugi four-component condensations on polymer support, 1149
2-phenyl-4-alkylidene-5(4*H*)-oxazolones, photodecarbonylation of, 4019
C-terminal degradation of peptides *via* oxazolone cyclization using ethyl chloroformate, then alcoholic HCl, 7557

Oxepanes

1,2-dioxanes, 1,2,4-trioxanes and 1,2,4-trioxepanes, synth by electrophilic cyclisation of unsaturated hydroperoxyacetals and -ketals, 463
oxepane structural units present in the brevetoxin family of natural products, synth by acetal cleavage of 6,8-dioxabicyclo[3.2.1]octanes, 339

Oxepins

chiral 6,7-dihydrooxepin-2(5*H*)-ones, conformation and diastereofacial selectivity in addition to enones, 633
2,3-dihydrooxepin and 1,3-cycloheptadiene, *ab initio* molecular orbital study of, vinylic *vs* allylic deprotonation, 9127

Oxetanes

stereoselectivity in photocycloaddition of methyl trimethylpyruvate to 2,2-diisopropyl-1,3-dioxole, 1195

Oxetanes/oxetanones

alkylidene –, synth by Paterno-Büchi reaction of allenes with aldehydes, substituent effects on regiochemistry, 8651
trans,trans-4-aryl-2,3-oxetanedimethanols, analogues of the antiviral nucleoside oxetanocin A, synth starting from *E*-2-bromo-1,3-pentadiene, 7667
functionalised 2-aryloxetanes, hydroxyl-directed reductive ring opening at the C-2 position, synth of triols, 4363
2-iminooxetanes by base-promoted rearrangement of 4-formylisoxazolidines, 917
β-propiolactones, synth from homochiral aldehydes amd Li enolates of thiolesters; rearrangement of β-(α-silyloxyalkyl) derivs to γ-butyrolactones, 245
2-siloxy-2-alkoxyoxetanes, formation in the photoreaction of cyclic ketene silyl acetals with 2-naphthaldehyde, 5901

Oxidation

allylic – of olefins with copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands, synth of optically active allylic benzoates, 2633
anodic oxidation of vindoline followed by reduction of the formed intermediate, synth of 10, 10′-bisvindoline, 3659
of azatriquinane with chlorine, synth of an

azatriquinacene, a theoretical precursor to diazadodecahedrane, 131
– of C=C in azidomitosene by (hexamethylphosphoramido)oxodiperoxo-Mo(VI), synth of (±)-mitomycin K, 6049
bicyclo[4.1.0]heptanes and bicyclo[6.1.0]nonanes, dimethyldioxirane –, formation of keto groups in the larger ring, 5363
catalytic O_2 oxidation of alkanes using 18-crown-6/$CuCl_2$/acetaldehyde, 1633
and chiral recognition of amino esters by dioxoruthenium(VI) porphyrins, formation of new imino ester Ru(II) complexes, 6701
chromium silicalite-2 catalyst for t-BuOOH – of benzylic alcohols to aldehydes/ketones, 2067
of clarithromycin A NMe_2 group using metalloporphyrins and hypochlorite; *N*-oxide, demethylation and deamination products, 787
copper(II) catalyzed oxidation of tetralin to 1-t-butylperoxytetralin by t-BuOOH under phase transfer conditions, 2063
m-CPBA oxidation of phenols, synth of steroidal quinols and *syn*-epoxyquinols, 3765
cyclopropyl methylene groups to cyclopropyl ketones by RuO_4, ring cleavage under similar conditions when methyne group is oxidized, 2425
dihydrofuranyl Fischer carbene complexes carrying thioether groups, – to sulfoxides by methyltrioxorhenium/H_2O_2, 9385
of (1*S*,2*S*)-1,2-dihydroxy-3-bromo-3,5-cyclohexadiene, synth of *syn* tetraols, 3407
dimethyldioxirane – of CHOH to CO, inhibiting effect of adjacent nitro group, 3507
dimethyldioxirane, free radical activity in adamantane oxidation, effect of $CBrCl_3$ and of air, 249
dioxirane oxidation of *O*-isopropylidene derivs of diols to 2-hydroxy ketones, 115
dye-sensitised photooxidation of t-butyl 3-methoxypyrrole-2-carboxylate in methanol, synth of t-butyl 3,5-dimethoxypyrrole-2-carboxylate and a bipyrrolic oxidative coupling product, 6657
electrochemical – of cyclic ketones in methanol, effect of ring size, 5759
electrochemical – of tri-t-butyl(trimethylsilyl)-tetrahedrane and tri-t-butyl(isopropoxydimethylsilyl)tetrahedrane, study by cyclic voltammetry, 583
enzymatic – of L- or D-lactic acid to pyruvic acid by lactate dehydrogenase, absolute configuration of the α,β-unsaturated γ-methyl-γ-lactone of Annonaceous acetogenins, 7043
ethers to esters by photo-irradiation with benzil and oxygen, 4179
Gif – of cyclohexane, importance of pyridine complexation, 8329
Gif –, hypersensitive probes in mechanistic studies, role of alkoxy radicals, 819, 823
of a highly substituted cyclohexanol, loss of stereochemical integrity at a neighbouring quaternary carbon, 1721
homogeneous – of naphthalenes by peracetic acid catalyzed by iron and manganese phthalocyanines, 1637
of hydroquinones and alcohols with acyl nitrates, mechanism, 5029
hydrotalcite catalysis of m-CPBA Baeyer-Villiger – of ketones, 4555
of hydroxy-enamines derived from the condensation of β-aminoalcohols and carbonyl compds, synth of polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, 9203
2-hydroxy-2-methyladamantane, – by pertrifluoroacetic acid to form 2-oxaadamantane, 5673
of isosafrole by sodium hypochlorite catalysed by manganese porphyrins, competition between epoxidation and *O*-dealkylation, 1091
– of marcfortine A α- to tertiary N, preparation of functionalized derivs, 6053
methyltrioxo-Re(VII)/H_2O_2 for – of organo-N compds, 805
methyltrioxorhenium catalysed direct – of secondary amines, synth of nitrones, 6025
microbiological Baeyer-Villiger – of bicycloheptenone using the fungus *Cunninghamella echinulata*, synth of (+)-multifidene and (+)-viridiene, 1011
Mn-salen catalysed asymmetric oxidation of enol derivs with iodosylbenzene as a terminal oxidant, synth of hydroxy acetals, 4389
N-aryl-*N'*-methoxyureas, oxidative cyclization by $PhI(OCOCF_3)_2$ forming 1-methoxybenzimidazolin-2-ones, 2361
of natural compds such as 1,8-cineole using Mn(III) porphyrin catalysts, 1893
of nitrile oxides by *N*-methyl morpholine *N*-oxide, synth of nitroso carbonyl adducts, 1909
of organic substrates with dioxygen and 2-methyl propanal catalysed by cobalt(II) porphyrin, 3769
osmium trichloride-catalysed – of olefins with peracetic acid, synth of α-ketol amino acid precursors, 3333
oxidative cyclisation of 3-hydroxy 4-vinyl furanoside derivs to bis-furanosides, 6007

oxidative degradation of larixol and larixyl acetate, constituents of the oleoresins of *Larix* species, 4705
oxidative insertion of manganese-graphite into organic halides, synth of allyl-, alkenyl- and functionalised arylmanganese reagents, 7009
oxidative scission of ethyl 2,2-dimethoxycyclopropane-1-carboxylates and methyl 2,2,6,6-tetramethoxybicyclo[2.2.0]hexane-1-carboxylates by RuO_4, 527
oxidative silylation of zinc pyropheophorbide *a* methyl ester with chlorotrimethylsilane, formation of a novel oxygen-bridged dimer, 6395
PET-oxidative cyclisation of unsaturated silyl enol ethers, synth of bicyclic and tricyclic ketones, regioselective control by solvent effects, 7349
of *p*-phenylenediamine in presence of anilines, synth of *N,N'*-bis(4-amino/dimethylaminophenyl)-1,4-quinonediimine, 731
of pheomelanins with hydrogen peroxide, synth of 2-carboxy-4-hydroxy-6-(2-amino-2-carboxyethyl)benzothiazole, 6799
photooxidation of adamantylideneadamantane, trapping of the perepoxide intermediate by sulfenate and sulfinate esters, 2911
of pyrrole α-methyl groups with ceric triflate, synth of pyrrole α-methyl methyl ethers, 315
$RuCl_3$/t-BuOOH – of steroidal olefins to enones, 3429
ruthenium tetroxide – of 3β-acetoxy-28-hydroxy-18-lupene, synth of 3β-acetoxy-28-nor-17,18:18,19-disecolupane-17,19-dion-18-oic acid and 3β-acetoxy-19,20,21,22,28,29,30-heptanor-17,18-secolupane-17,18-dioic acid, 5187
of saturated alkanes and benzenoid aromatics by H_2O_2 in air catalyzed by methyltrioxorhenium, 6487
sclareol – to 3-oxosclareol using *Mucor plumbeus*, 1241
Sharpless enantioselective sulfur oxidation as source of chirality in synth of 2-(*R*)- and 2-(*S*)-hydroxy-1-phenylbutan-1-ones from propanal, 8929
of substituted 2-methylpyrroles with perhalogenated metalloporphyrins, synth of dipyrromethanes, 603
of sulfides by methyl(trifluoromethyl)dioxirane, involvement of a sulfurane intermediate, 2299
of sulfides with t-butyl hydroperoxide catalysed by camphorsulfonic acid, 7129
sulfides to sulfones using 2-methylpropanal and dioxygen, 3367
using potassium permanganate-metal sulfates and nitrates, β-selective epoxidation of Δ^5-unsaturated steroids, 687
zeolite-catalysed – of benzylic and acetylenic alcohols with t-butyl hydroperoxide, synth of the corresponding carbonyl compds, 7845

***N*-Oxides**
benzoyl chloride adducts of pyridine and quinoline *N*-oxides, reaction with carbonitriles, synth of 2-pyridyl- and 2-quinolyl diacylamine *via* a carbene intermediate, 69
7-nitro-2-propylbenzimidazole 3-oxide, synth by action of base on *N*-butyl-2,6-dinitroaniline, analogous reactions usually failed, 767
4-(3-phenylpropyl)pyridine *N*-oxide as an additive for the MnLCl/NaOCl catalysed asymmetric epoxidation of indene, 3271
pyridine *N*-oxide, reaction with benzylic bromides under microwave irradiation, synth of aromatic aldehydes, 7725
tetrahydropyridine *N*-oxide, copper-catalysed epoxidation of, 8497
trimethylamine *N*-oxide, reagent for the promotion of the retro-aldol reaction of R106-1 (LY295337), generation of R106-sarcosine, 4301
see also Nitrile oxides, Nitrones

Oximes
β-alkoxy α-oximino esters by reaction of α-cyano α-alkoxy carbonyl epoxides with hydroxylamine hydrochloride, 4693
O-alkyl- – of 5-*O*-tosyl aldopentose derivs, tandem reductive cyclization forming 1,3,4,5-tetrahydroxypiperidine derivs, 1547
amidoxime, condensation with carboxylic acids in the presence of a peptide coupling reagent in diglyme, synth of the corresponding substituted 1,2,4-oxadiazoles, 6627
amidoximes, horseradish peroxidase oxidation, isolation and structure of *O*-(arylimidoyl) arylamidoximes, 3113
conjugated oximes, conversion into substituted pyridines under Vilsmeier conditions, 8231
generation and trapping of nitrones and bisnitrones from –, synth of symmetrically linked bi-isoxazolidines, 4597
halo or nitro amidoxime, isomerisation/cyclisation of, key step in synth of 3-(4-pyridinylamino)-1,2-benzisoxazoles, 995
β-hydroxyiminoalkyl phosphine oxides, synth by addition of hydroxylamines to allenyl phosphine

oxides and their condensation with ketones forming αβ-unsaturated –, 1289
α-ketoester *O*-benzyl –, enantioselective allylation using allylzinc and external chiral ligand, α-(benzyloxyamino)-ester synth, 8997
O-methyl –, intramolecular trapping of carbene from α-diazo-β-ketoamide by, synth of fused *N*-methoxyaziridine, 7205
phenethylguanidoxime, photo-sensitised oxygenation of yielding a urea deriv and nitric oxide, chemical model for biological oxidation of N^{ω}-hydroxy-L-arginine and L-citrulline, 4393
tryptophan linked to the Kaiser oxime resin, Pictet-Spengler reaction with aldehydes, synth of 1,2,3,4-tetrahydro-β-carboline derivs, 3963
zinc-mediated allylation of benzyloxime of glyoxylic acid and derivs in aqueous media, synth of α-allyl α-aminoacids, 5273

Oxiranes
amino alkoxy oxiranes, treatment with butyllithium/diisopropylamine/potassium t-butoxide mixture, synth of aminoalcohols, 5209
aminolysis of – catalysed by lithium trifluoromethanesulfonate, 7715
oligopeptides containing an oxirane ring in the place of a peptidic bond, synth by oxidative conversion of β-hydroxyselenides obtained by Mukaiyama reaction of *N*-protected β-amino α-selenyl aldehydes, 2651
oxazolinyl oxiranes derived from treatment of 4,4-dimethyloxazolinylchloromethyllithium with aldehydes, deblocking of provides α,β-epoxy aldehydes, 4777, 4781
oxiranyllithium compds, alkylation of by reaction with α-alkoxy alkyl triflates, synth of substituted epoxides, 2605, corrig. 6959
styryl oxiranes and benzothiazolylvinyl oxiranes, synth from allyl chlorides by deprotonation and subsequent reaction with carbonyl compds, 4777, 4781
substituted oxiranyl radicals generated from glycidic acids, cyclisation of, 6299
see also Epoxides

Oxocarbon acids and derivs
squarate esters, reactions with alkenyl anions, responsibility of helical equilibration within the advanced octatetraene intermediate for stereochemical control, 3299
squaric acid, dimethyl squarate, conversion into stilbenyl and distilbenyl squaraines, 1191

Singlet oxygen
1,4-di(*p*-fluorophenyl)-2,3-dioxabicyclo[2.2.2]oct-5-ene, synth, antimalarial activity, 7225
photooxidation of stilbenes, electron transfer within zeolites, 5235
reaction with sulfenamides, steric and electronic effects on partitioning of persulfinyl intermediate between quenching and chemical reaction products, 6093
solvent effects on stereoselectivity of ene reaction of – with allylic alcohols, 7159

Oxygen heterocycles
9-amino-2,3,8-trihydroxyperhydrofuro[3,2-*b*][1]-benzopyran derivs, diastereoselective synth from *O*-cyclohexenyl carbohydrate nitrones, 7635
1,4-benzodioxan-2-spiro-4′-(1,3-dioxan) ring system, synth of (±)-strobilurin E, 7955
cyclic hydropyran oligolides, synth by macrolactonisation of tris(hydropyran) hydroxy acids or by cyclooligomerisation of bis- or tris(hydropyran) seco acids, 343
cyclic oligolides, synth by an acylketene mediated lactonisation from 6-(ω-hydroxyalkyl)-dioxinone, 7683
2,6-dialkyl-3,7,8-trihydroxydibenzofuran-1,4-dione, central ring system of popolophuanone E, synth, 5719
dianion of 3-oxo-13-tetradecanolide, alkylation of, 5069
dinaphtho[1,8-*bc*:1′,8′-*hi*]xanthene system from dimerization of 2,5-dimethyl-6-oxophenalen-1-oxyl radical, 877
6,8-dioxabicyclo[3.2.1]octan-2-ol and 2,8-dioxabicyclo[3.2.1]octan-4-ol systems, synth by cycloaddition of carbonyl ylids to methyl glyoxylate in approach to squalestatin core, 4623
2,8-dioxabicyclo[3.2.1]octane system, photoannulation of keto-acetals by Norrish type II reaction, synth of systems related to zaragozic acid, 4883
1,4-dioxene, use in synth of highly functionalised AB taxane ring system, 7013
enantiopure oxatricyclo[3.3.1.$0^{4,6}$]nonanes, synth and selective opening of an activated cyclopropane ring, 9187
furo[2,3,4-*de*][1]benzopyran system, synth of phomactin A part structure, 275
(-)-goniofupyrone, furano[3,2-*b*]pyran-5-one deriv, synth and absolute configuration, 5389
5-hydroxy-3-(3,6-dihydropyran-2-yl) furans and furan-2(5*H*)-ones, synth, 8007
lactol-derived allylic ethers, ene-type reaction of catalysed by silyl triflates, synth of propionalde-

hyde-substituted tetrahydrofuranes and -pyrans *via* the cyclic oxonium intermediate and allyloxysilyl moiety, 3705
Meldrum's acid, acylated, conversion into 4-pyrones by enol ethers, 6499
2-methylene-3,6-bicyclo[3.1.0]hexanes, electrophilic additions to the double bond, stereochemistry, 2777
modelling and synth of molecular systems ("mappemondes") from calix[4]-bis-crown, 3325
ortho-condensed six-, seven-, eight- and nine-membered rings with one O atom and one double bond by thio-annulation and Ramberg-Bäcklund reaction, approach to ciguatoxin, 2865
ortho-condensed six- and seven-membered rings with one O atom by allylstannane condensation with acetals, 2869
3-oxatetracyclo[3.3.0.0^{2,8}.0^{4,6}]octane, synth by photolysis of a Diels-Alder adduct obtained from reaction of furan with cyclopropene, 1385
pancratistatin, an anticancer compd, synth of a diol from *myo*-inositol as an intermediate for synth of 7-deoxypancratistatin, 13
perhydrofuro[3,2-*a*]pyran, C11-C18 portion of zooxanthellatoxin fragment, synth, 3153
perhydrofuro[2,3-*c*]pyran system, formation using silicon chemistry, 9119
perhydro-oxepino[3,2-*b*]oxepin CD system of hemibrevetoxin B, synth by ring expansions, 217
4-phenylsulfonyl-1,6-dioxaspiro[4,5]decan-10-ones, Na/Hg reductive rearrangement to 5-hydroxy-1,6-dioxadecalins, 3179
poly(*N*-acryloylmorpholine) as a soluble support for the liquid-phase synth of oligonucleotides, 4761
2-substituted furotropones, synth by reaction of alkynyl(phenyl)iodonium tetrafluoroborates with tropolones, 5539
tetrahydropyrans, oxepans, stereoselective synth based on ring expansion; tetrahydrofurans, 213
2,4,6,6-tetramethyl 6*H*-dibenzo[*b*,*d*]pyran and 7,12-diphenyl-6*H*-benzo[*b*]naphtho[2,3-*d*]pyran synth by dehydrochromene trapping reactions, 1313
3-triflyloxy-perhydropyrano[3,2-*b*]pyrans from bromo-diepoxides by AgOTf-promoted ring expansions, 6173
2,4,6-trioxabicyclo[3.2.0]heptane-7-carboxylic acid system, synth by Paterno-Büchi reaction, stereochemistry, 1195
cis- and *trans*-1,7,9-trioxadispiro[5.1.5.3]hexadecane, synth, stability and solution structures, 5461, 5465
see also Lactones, and the individual ring systems

Oxygenation
of 1-aminomethyl-1-t-butyl-2-methoxy-2-(3-methoxyphenyl)ethylenes, effect of allylic nitrogen on the reaction pathway and chemoselectivity, 8191
1,4-endoperoxides of seven-membered rings by photochemical – of 1,5-dimethylene compds, antimalarial activity, Fe(II) reduction, 815
photo– of α,α′-dimethylstilbenes sensitised by photochromic compds, 5127
photo– of trisubstituted alkenes, rate-determining formation of perepoxide, 4105
photo-sensitised – of phenethylguanidoxime yielding a urea deriv and nitric oxide, chemical model for biological oxidation of N^{ω}-hydroxy-L-arginine and L-citrulline, 4393
singlet – of 1-alkoxymethyl-2-aryl-1-t-butyl-2-methoxyethylenes, synth of the corresponding 1,2-dioxetanes, 397

Ozonation
of *trans*-2-butene in gas phase, observation of secondary 2-butene ozonide in, 3391

Ozonides
indene – dimer, a novel 1,2,4,6,7,9-hexoxecane deriv, 2093
secondary 2-butene ozonide, observation of in ozonation of *trans*-2-butene, 3391

Ozonolysis
gas-phase – of alkenes, formation of secondary ozonides, 9297
of 2-tributylstannyl tetrahydrofurans, formation of γ-butyrolactones, 9115

Palladium and compds
palladium(II) complexes $[PdL_2(RCN)_2](BF_4)_2$ as catalyst of the hetero Diels-Alder reaction of dienes with aldehydes, synth of 5,6-dihydro-2*H*-pyrans, 6351
chiral sulfoximine/Pd-complexes as catalysts for enantioselective allylic alkylations, 3985
1,1-dimethyl allene, insertion into C-Pd bonds, synth of isopropylidene heterocycles, 7263
enzyme and palladium combinations for dynamic kinetic resolution of allyl acetates, 1859
$[(\eta^3\text{-}C_3H_5)PdCl]_2$-dppf as catalyst for intramolecular hydrocarbonation of allenes bearing active methyne groups at the terminus of the carbon chain, 7453
palladium catalyst for elimination reaction of (±)-8α-methoxycarbonyloxy-4aβ-methyl-2,3,4,4a,5,6,7,8-octahydronaphthalene, importance of

chirality reversal depending on the palladium-chiral phosphine ratio, 7115
palladium chloride for mediation of Ferrier rearrangement of 6-deoxyhex-5-enopyranosides, 649
(phosphino-1,3-oxazine)palladium as catalyst for enantioselective allylic substitution, 9143
see also Catalysis, Catalysts

Paterno-Büchi reactions
allenes with aldehydes, substituent effects on regiochemistry, 8651
stereoselectivity in photocycloaddition of methyl trimethylpyruvate to 2,2-diisopropyl-1,3-dioxole, 1195

Pauson-Khand reactions
enyne-2-azetidinones, – cyclization forming tricyclic β-lactams, 6901
of *exo*-methylene carbohydrate enynic substrates, unexpected formation of fused "[4.1.0]bicycloheptene-pyranose" tricyclic product, 1489
solid-phase synth of 6-oxo-2,3,4,6,7,7a-hexahydro-1*H*-2-pyrindine-3-carboxylic acids by intramolecular –, 3433
synth of bis-enone tetraquinane by double – of 4,4-diethynyl-5,5-diallyl-2,2-dimethyl-1,3-dioxolane, 7185
use of catalytic $Co(acac)_2/NaBH_4$ for alkyne/alkene/CO co-condensation, 3145

Penams/penems
6,6-dibromo-2′-(*Z*)-chloromethyl and -bromomethyl anhydropenicillins from 2α-methylpenam-3α-carboxylic acids, 4431
penems, carbapenems and related β-lactam antibiotics, synth of acetoxyazetidinone, a key intermediate to, from *N*-acryloyl-1,3-benzoxazinone, 5565

Penicillins
6,6-dibromo-2′-(*Z*)-chloromethyl and -bromomethyl anhydropenicillins from 2α-methylpenam-3α-carboxylic acids, 4431
methoxymethyl esters, solvolysis in aqueous methanol, 2761
Penicillium sp. separated from marine alga *Enteromorpha intestinalis*, structure elucidation of penostatins isolated from, 655

Peptides and polypeptides
synth of (*S*)-2-amino-N^{α}-(9-fluorenylmethoxycarbonyl)-3-(α^4,3-*O*-bis-t-butoxycarbonylpyridoxamin-5-yl)propanoic acid, assembly of a polypeptide incorporating pyridoxamine moiety, 2129
acyclic di- and tripeptide hemiacetals, synth by reaction of di- and tripeptide aldehydes with methanol, 2517
almazole D, antibacterial 2,5-disubstituted oxazolic dipeptide from a delesseriacean seaweed of Senegal, structure, 3049
ε-*N*-aminolysine, synth on solid phase by *N*-amination, incorporation into peptides, 7259
5-amino-3-pentynoic acid, analogue of β-turn segment, synth and incorporation into polypeptide chains, 6911
apicidin, cyclic tetrapeptide isolated from *Fusarium pallidoroseum* as inhibitor of apicomplexan histone deacetylase, antimalarial and antiparasitic activity, 8077
application of a peptide library to identify selective interaction between small peptides in an attempt to develop recognition molecules toward protein surfaces, 85
axinastatins 2-4, cyclic heptapeptides, and axinastatin 5, cyclic octapeptide, synth, 5355
carboxyglutamic acid-containing peptides, enzymic synth in organic media, 3609
chiral β-sulfonopeptides, synth both in solution and in solid phase using sulfonyl chlorides derived from enantiomerically pure 2-substituted taurines under mild coupling conditions, 8589
conformationally constrained, bicyclic, 14-residue peptide containing two overlapping i, i+7 side-chain bridges, synth, 1731
constrained cyclic peptoids, generation of libraries of – by cyclopropanation of unsaturated peptoids on solid support, 6247
coupling of extremely hindered amino acids using Fmoc amino acid fluorides, 5483
crystallization-induced dynamic kinetic resolution of dipeptide-derived 5(4*H*)-oxazolones, 6575
cyclodidemnamide, 21-membered cyclopeptide containing thiazole, thiazoline, oxazoline and pyrrolidine rings, synth, 9111
cyclotheonamide A, cyclic pentapeptide from Japanese marine sponge *Theonella* sp., transformation to a ring-opened product by treatment with sodium carbonate or triethylamine, 3667
cysteine containing peptides, heterodimerisation of using 2,2′-dithiobis(5-nitropyridine), introduction of the 5-nitro-2-pyridinesulfenyl group, 1347
derivatisation of D,L-FDLA (1-fluoro-2,4-dinitrophenyl-5-leucine amide) for determination of absolute configuration of amino acids in peptide by Marfey's method, 3001

N,N'-dialkylphosphorodiamide protecting groups for Fmoc synthesis of phosphotyrosine-containing peptides, 4953
diketopiperazine catalyst containing the amino acid (*S*)-norarginine, solid-phase synth of, 5839
dipeptide esters, diastereoselectivity of hydrolysis, pH and temperature effects, 3461
distamycin, tripeptide antibiotic originally isolated from *Streptomyces distallicus*, synth and DNA binding properties of nitro analogues of, 7801
dye-bound pyrrolidine with two macrocyclic side arms at positions 3 and 4, sequence-selective receptors for peptides, 8699
enhanced intramolecular amide-amide hydrogen bonding in peptides through cooperativity, 2189
ferrocene 1,1'-dicarboxylic acid, bis-(aminoacid) derivatives, ordered conformation modelling H-bonding in a polypeptide antiparallel β-sheet, 5289
four-α-helix bundle 57-peptide structure with alternating D and L segments, synth, CD, fluorescence, conformation, 881
glycolate ester peptides, synth from Fmoc-protected amino acids, use for the assembly of *de novo* designed multimeric proteins using subtiligase, 6653
glycopeptide antibiotics, synthetic studies towards, synth of 16-membered cyclic tripeptide (DOEG ring) system of teicoplanin, 3023
gramicidin A, peptide produced by *Bacillus brevis*, selective tryptophan replacement with aspartic acid, 5199
guanidinium based tweezer receptor with two tripetide chains, synth on solid support, 5409
head-to-tail cyclic peptide libraries of varying ring size, synth using an amino acid linked by its side chain to a solid support, 591
hydrophobic peptides dodecaalanine and chemotactic protein 10, solid phase synth using solubilizing tail strategy, 8431
incorporation of (*S*)-α-methylmethionine, (*S*)-α-methylleucine, 2-aminoisobutyric acid and (*S*)-α-methylphenylalanine into a peptide sequence and coupling reactions of, 6713
lanthionine, thioether analogue of cystine, synth for combinatorial and solid phase peptide chemistry by Michael addition between Fmoc-L-Cys-allyl ester and Boc dehydroalanine-methyl ester, 1101
loloatin B, marine cyclic decapeptide antibiotic, structure, 7201
maleimide-assisted on-resin peptide macrocyclization, 5665
γ-methyl-*E*-olefin as isosteric replacement of the peptide bond, 703
nodularin, hepatotoxic cyclic pentapeptide, synth of analogues, 6915
oligopeptides containing an oxirane ring in the place of a peptidic bond, synth by oxidative conversion of β-hydroxyselenides obtained by Mukaiyama reaction of *N*-protected β-amino α-selenyl aldehydes, 2651
oscillatorin, cyclic decapeptide containing oscillatoric acid, unusual pyrrolo-indole amino acid, 6873
pentapeptide synth on new polyethylene glycol crosslinked support, 6185
peptide aminoalkylamides, solid phase synth using an allyl linker on MBHA resin, 3031
peptide bond formation in aqueous media, use of 2,2-dichloro-4-(2-phenylethyl)-4-trimethylsilylfuran-3(2*H*)-one as coupling reagent, 7541
peptide bond formation by intramolecular acylation of an acyl disulfide *via* a 6-membered ring intermediate, 933
peptide containing the cell adhesion sequence Arg-Gly-Asp-Ser, attachment to 2,3-diphytanoxypropanamine, an archaebacterial lipid model, 7391
peptide coupling reagent for synth of substituted 1,2,4-oxadiazoles by condensation of the corresponding amidoxime with carboxylic acids in the presence of, 6627
peptide nucleic acid with alternating D-homoalanyl adenine/L-alanyl thymine building units, formation of a self-pairing double strand, 475
peptide synth using urethane *N*-carboxyanhydrides, effect of base, 1027
peptides with tripodal side-chain bridges, solid-phase synth and optimisation of the solvent conditions for solid-phase cyclisations, 2173
peptidic nucleic acid dimer containing guanine and adenine, liquid phase synth, 1413
peptidoglycan monomers, solid phase synth by coupling of the corresponding lipid-bearing glycocarboxylic acids to resin bound peptides, 8097
perhydropyrrolo[1,2-*a*]pyrazine-3,6-diones, ring-opening to γ-lactams for use as conformational constraints in peptides, 2471
phosphopeptides, selective enzymic removal of phenylacetamido protecting groups, 8725
phosphotyrosine peptide (Stat $91^{695-708}$), synth

using an inter-assembly phosphorylation strategy, 4765
phosphotyrosine peptides, synth from the corresponding phenolic precursors, 3635
polyethyleneglycol-bound peptides, photo-triggered selective C-terminal *N*-methylamidative cleavage of, 6421
polysporins A-D, peptaibols isolated from *Trichoderma polysporum*, structures, 3039
L-prolyl-L-*m*-[bis(chloroethyl)amino]phenylalanyl-L-norvaline ethyl ester hydrochloride, anti tumour tripeptide ester, synth from L-*m*-sarcolysin, 563
protection by 2-hydroxy-4-methoxybenzyl group, attachment to *N*-terminus of aminoacid on polymer support by reductive alkylation using aldehyde/$NaCNBH_3$, 9097
pupukeamide, linear tetrapeptide from mollusc, structure, 8993
putative β-turn mimetics incorporating the i+1, i+2 and i+3 sidechains, synth on a solid-support of guanidine resin which also acts as a general base catalyst, 6961
pyoverdins, chromopeptide produced in iron-deficient cultures of *Pseudomonas fluorescens*, structural elucidation, 3329
serine-threonine protein phosphatase substrates, solid-phase synth using bis(polyfluorophenyl)-chlorophosphates, 8227
side-chain anchoring and cyclization in synth of cyclic peptides, 4229
solid phase synth of peptides containing L-phenylalanine derivs substituted with vicinal tricarbonyl moieties, 8475, 8479
solid-phase peptide synth using 4-carboxyphenylalanine and 4-methoxycarbonylphenylalanine derivs, 6661
α-substituted lactam dipeptide isostere, synth and derivatisation of, 4319
subtilisin-CLEC for synth of alkylamides of aminoacids and peptides, 5317
β-sulfonopeptides bearing a taurine in place of a penultimate amino acid unit, synth as inhibitors of D-alanyl-D-alanine transpeptidases, 4663
synthetic receptors based on peptidosulfonamide peptidomimetics, synth and binding selectivity against a tripeptide library, 8253
C-terminal degradation of – *via* oxazolone cyclization using ethyl chloroformate, then alcoholic HCl, 7557
C-terminal proline peptide, synth by Fmoc-based solid-phase synth using Dpr(Phoc) linker, 9195
thrombin inhibitor L-370,518, synth from 4-aminocyclohexane carboxylic acid *via* α-hydroxy-β-lactam, 5045
tricyclic homodetic peptide, synth using coordinated orthogonal protection, 5637
tripeptide α′,β′-epoxyketones as inhibitors of the chymotrypsin-like activity of porcine endothelial cell derived proteasome, synth from Boc-[*S*]-phenylalanine, 1343
tripeptides with C-terminal hydroxamic acid groups, synth on solid support, 8045
trityl group for *N*-protection of aminoacids in solid-phase peptide synth using PyAOP coupling, 4195
tryptophan cross-linking by acid and photo-oxidation, 5629
see also Glycopeptides, glycoproteins

Peptide analogues/mimetics

(*E*)-alkene dipeptide isostere for Phe-Gly, synth of BocNH-CH(CH_2Ph)CH=$CHCH_2CO_2H$, 5359
N-alkylcarbamate oligomers, solid-phase synth, 5653
AzAsx-Pro-containing aza-peptides, aza-asparagyl-proline, synth and structure, 183
N-α-benzoyl-*cis*-4-amino-L-proline, a γ-turn mimetic, 1933
branched peptides and conformationally constrained analogues from cyanomethyleneamino pseudopeptides, 2083
carbopeptoids with 1,2′-CO-NH links between sugar residues, 1563
conformationally restricted reduced amide dipeptide isosteres, synth by Ritter reactions, 1297
oligo- ureas with polypeptide like structures, synth on solid phase, 5305
oxytocin – with bridge containing oxime group replacing disulfide link, 6861
peptidyl argininals, general synth, 4109

Perfluoroalkyl compds

bis(trifluoromethyl)alkanediol diacetates, enzymic (CAL) enantioselective mono-hydrolysis, 5001
enantioselective reduction of trifluoromethyl ketones using alcohol dehydrogenase from *Geotrichum candidum*, 5727
hexafluoroacetone acetal internucleotide link in T-T analog, incorporation into oligonucleotide, 8667
hexakistrifluoromethylbenzene and 1,3,5-tristrifluoromethylbenzene from bis- and mono-trifluoromethylacetylenes, dirhodium complex cat-

alysts for trimerization, 6097
β-perfluoroalkyl alkyl halides, Pd-catalyzed coupling with organostannanes, 8405
perfluorobutanesulfonyl fluoride/DBU for formation of epoxides from 1,2-diols, 7497
polyfluoroalkylimidoyl iodides, synth by radical addition of R_FI to aryl isocyanides, 7999
synth of pyrrolo-fused trifluoromethyl 1,2,3,4-tetrahydroquinazolines by co-condensation of 2-aminobenzylamine with methyl trifluoropyruvate and aliphatic or alicyclic ketones, 6939
trifluoromethanesulfinates,unexpectedformation in triflylation reactions of sterically hindered alcohols and phenols, mechanism, 8359
trifluoromethyl enaminoketones and β-trifluoromethyl enaminoaldehydes, synth from chloroacroleins, 8751
(Z)-trifluoromethyl enol and thioenol ethers and enamines, reactivity towards organolithiums, 171
trifluoromethyl thio- and seleno-ethers from CF_3SiMe_3 with disulfides and diselenides, 6865
trifluoromethyl-substituted 1,4-dihydropyridines, synth using $POCl_3$/pyridine on silica gel for dehydration, 4177
trifluoromethylthio arenes from heating potassium trifluoroacetate with diaryl disulfides, 9057

Perfumes

see Flavours and fragrances

Peroxides

antimalarial endoperoxides, 1,4-di(*p*-fluorophenyl)-2,3-dioxabicyclo[2.2.2]-octane and -oct-5-ene, synth, activity, 7225
1,2-azidohydroperoxides by photooxygenation of alkenes in presence of azide ions, photoinduced electron transfer mechanism, 8367
bis(bicyclo[1.1.1]pentane-1-carbonyl) −, laser flash photolysis, bicyclopent-1-yl radical generation, 8059
t-butyl hydroperoxide for oxidation of benzylic and acetylenic alcohols catalysed by zeolites, synth of the corresponding carbonyl compds, 7845
2,6-difluorophenyl triisopropyl/isobutylsilyl-peroxyoxalate, synth and kinetics of chemiluminescent decay on addition of diphenylanthracene and fluoride, 8273
1,4-endo− of seven-membered rings by photochemical oxygenation of 1,5-dimethylene compds, antimalarial activity, Fe(II) reduction, 815
gas-phase ozonolysis of alkenes, formation of secondary ozonides and hydroperoxides, 9297
Gif oxidations, effect of carboxylate ligands, possible involvement of a μ-peroxo dimer in hydrocarbon activation, 1133
hydrogen peroxide and iron pentacarbonyl in pyridine-acetic acid for conversion of saturated hydrocarbons into their corresponding homologous carboxylic acids, 8137
hydrogen peroxide/urea with methyl trioxorhenium for regio- and stereo-selective epoxidation of alkenes, 2717
5-hydroperoxide analogue of coelenterate luciferin, synth and chemiluminescent properties, 8425
hydroperoxide epoxidation of α-isophorone using heterogeneous catalysts, 5995
3-hydroxy-1,2-dioxan-4-carbonitriles, synth from alkenes and acylacetonitriles using $Mn(OAc)_3$ and air oxidation, 4949
indene ozonide dimer, a novel 1,2,4,6,7,9-hexoxecane deriv, 2093
perepoxide intermediate formed in the photooxidation of adamantylideneadamantane, trapping by sulfenate and sulfinate esters, 2911
photo-oxygenation of trisubstituted alkenes, rate-determining formation of perepoxide, 4105
qinghaosu/artemesinin, behaviour in presence of heme and non-heme Fe(II) and Fe(III), 253, 257
reaction of sulfenamides with singlet oxygen, steric and electronic effects on partitioning of persulfinyl intermediate between quenching and chemical reaction products, 6093
symmetrical and unsymmetrical endo peroxides, reaction with organometallic reagents, synth of hydroxy ethers, 6635
tetra- and hexa-hydrophthalazine 5,8-endoperoxides, synth by cycloadditions to 2,3-dioxabicyclo-[2.2.2]oct-5-ene and -[2.2.1]hept-5-ene, and 6,7-dioxabicyclo[3.2.2]non-2- and -8-ene and -2,8-diene, 921
see also Dioxiranes, Ozonolysis

Peterson reactions

2-diethoxyphosphonyl-1-alkoxy-3-methylpenta-1,3-dienes, synth by reaction of lithiated dianion of diethyl α-trimethylsilyl-prenylphosphonate with alkyl formates, 2951

Petrochemistry

see Geochemistry

Pharmacologically active compds

5-(2-aroyl-5-benzofuranylmethyl)-thiazolidine-2,4-dione, insulin-sensitivity enhancers, synth from 4-hydroxy-*meta*-phthalaldehyde, 9267
β-adrenergic receptor antagonist MY336-a pre-

cursor, synth, 5329
balanol, PKC-active fungal metabolite, solid-phase synth of analogues, 8439
blepharocalyxins A and B, diarylheptanoids, NO formation inhibitors in murine macrophages, 7283
(*S*)-carbinoxamine, histamine H_1 antagonist, enantioselective synth via reduction of *N*-allylpyridinium triflate using oxazaborolidine-catalyzed catecholborane, 5675
cetirizine hydrochloride, histamine antagonist, catalytic enantioselective synth, 4837
clopipazan, tricyclic pharmacologically active compd, synth *via* directed dilithiation of diaryl compds, 5073
dehydrowarfarin and Me enol ethers, asymmetric hydrogenation using DuPHOS-Rh catalysis, 8321
6,8-dioxabicyclo[3.2.1]octan-2-ol and 2,8-dioxabicyclo[3.2.1]octan-4-ol systems, synth by cycloaddition of carbonyl ylids to methyl glyoxylate in approach to squalestatin core, 4623
dispacamides, alkaloids with antihistamine activity from *Agelas* sponges, 3587
DMP 754, non-peptide platelet GP IIb/IIIa antagonist, chiral synth, 4455
5-HT_2 serotonin agonist 4-(2-aminopropyl)-7-bromo-5-methoxy-2,3-dihydrobenzofuran, improved synth, 7889
non-peptide substance P antagonist RPR 107 880, enantiospecific synth, 3125
photoannulation of keto-acetals by Norrish type II reaction, synth of systems related to zaragozic acid, 4883
RPR 111 905, a perhydro-isoindole deriv, synth, 8743
serotonin agonist TFMPP, synth by alumina supported reaction of aniline derivs with bis(2-bromoethyl)-*N*-(ethoxycarbonyl)amine, 319
steric parameters for amines estimated by MOPAC, application to adrenergic blocking activity of β-haloalkylamines, 4617
see also Antibacterials, Antiinflammatory compds, Biologically active compds, Chemotherapy, Drugs, etc.

Phase transfer
N-benzyl cinchonidine as PTCs for enantioselective synth of aziridines from olefins and *N*-arylhydroxamic acids, 3183
chromium silicalite-2 catalyst for t-BuOOH oxidation of benzylic alcohols to aldehydes/ketones, effect of PTC, 2067
copper(II) catalyzed oxidation of tetralin to 1-t-butylperoxytetralin by t-BuOOH under − conditions, 2063
cyanoethylation and t-butoxycarbonylethylation of polyols under PTC, 1237
ketene acetals and dithioacetals by elimination from β-haloacetals using base and PT catalyst, comparison of yields using microwave and ultrasound activation, 1695

Phenalenes
2-aryl-3-oxophenalen-1-oxyl radicals, generation, ESR, dimerization, 873
2,5-dimethyl-6-oxophenalen-1-oxyl radical, generation, ESR, dimerization, 877

Phenanthridines
para- and *nido*-carboranylpropyl ethidium analogues, synth for neutron capture therapy, 6905

Phenolics
capsaicin analogs, synth using liver acetone powder from vanillylamine and fatty acid esters, 2789
gossypol, plant −, asymmetric synth of hexamethyl ether by Ullmann coupling, 791

Phenols
acid-catalyzed intramolecular photocyclization of 3-alkenyloxyphenols, synth of dihydrobenzocyclobutenes, 2027
acylation using acid chlorides and $Hf(OTf)_4$, 2053
allyl phenyl ethers related to mycophenolic acid, establishment of intramolecularity of unusual rearrangement of *via* a crossover experiment, 21
1,3-alternate calix[4]arene with catechoylamide units on upper rim, *O*-tetrapropylated on lower, an exo-ditopic ligand, 4503
biogenetic precursors to ubiquinone, synth and enzymic reactions, 2395
castavinols, polyphenol series from Bordeaux red wines, structures, 7739
conversion of − into arylthiols *via* triflates and Pd-catalyzed coupling with $KSSiPr^i_3$, 4523
m-CPBA oxidation of −, synth of steroidal quinols and *syn*-epoxyquinols, 3765
trans-1,2-cyclopentanediyl-2,2′-biphenol by di-selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides with samarium(II) iodide/HMPA, 8505
H-bonding in − and calix[4]- and [6]-arenes by ^{17}O NMR, 5797
2-halophenols and -anilines, reaction with vinyl halides or triflates and CO, synth of 3-spiro-2

-oxindoles and 3-spiro-2(3*H*)-benzofuranones, 695
4-hydroxy-*meta*-phthalaldehyde, synth by formylation of salicylaldehyde or *p*-hydroxybenzaldehyde, conversion into 2-aroyl-5-benzofuran-5-carbaldehydes, 9267
o-(1-hydroxyalkyl)-*p*-(phenylsulfinyl)phenols, protection of both OH groups by dimethylsilylenedioxy ether formation before acetoxy-desulfinylation under Pummerer-type conditions, 7545
intramolecular alkylation of styrene-alkyllithium adducts by *o*-benzyloxy- and -allyloxy groups, synth of *o*-substituted –, 4209
p-methoxyphenol from photo-fragmentation of 3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane, 8181
2-methoxyphenols, ring expansion to *cis*-decalin and bicyclo[4.2.2]dec-7-en-4-one derivs, 5897
phenol and silicon tetrachloride as N^{α}-t-butoxycarbonyl group deprotecting agent in solid phase peptide synth, 5989
phenolic Schiff bases, transformation to 2-arylbenzoxazoles by thianthrene cation radical perchlorate in the presence of 2,6-di-t-butyl-4-methylpyridine, 8869
phenolic silyl ethers, mild Pd-catalyzed desilylation, 153
(phenylsulfinyl)phenols, prep from aryl phenylsulfinates *via* thia-Fries rearrangement, 7
phosphorylation of – using dibenzyl phosphite with CCl_4/base, 771
$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
sterically hindered – and alcohols, formation of trifluoromethanesulfinates with Tf_2O/Et_3N, mechanism, 8359
synth by intramolecular [2+2] photocycloaddition of 6-alkenyl-2,3-dihydro-4-pyrones and rearrangement of the products, 1663
tridentatols A-C, phenolic metabolites from marine hydroid *Tridentata marginata*, structures and antifeedant activity, 9131
turmeronol B, phenolic sesquiterpene ketone from *Curcuma longa* L., synth from 2-hydroxy-4-methylacetophenone, 2279
tyrosinase in hydroxylation of –, oxidation and Diels-Alder reaction cascade, 3833
unusual alkylation of – by alkyl (triphenylphosphoranylidene)acetates, 1233

Pheromones

danaidone, synth of synthetic precursor, 4099
(*S*)-geranylcitronellol, diterpene pheromone from *Bombus* and *Psithyrus* bees, synth via conjugate addition of functionalised copper reagent to 2-substituted *exo*-bornyl crotonates, 7127
of leafroller moth *Phtheochroa cranaodes* ((3*E*, 5*Z*)-3,5-dodecadienyl acetate), identification and synth, 1505
lurlene, sex pheromone of green flagellate *Chlamydomonas allensworthii*, synth, 1821
methyl 4-methylpyrrole-2-carboxylate, ant trail –, synth, 1523
(+)-multifidene and (+)-viridiene, major constituents of brown algae pheromones, synth *via* a microbiological Baeyer-Villiger oxidation of bicycloheptenone using the fungus *Cunninghamella echinulata*, 1011
9-propyl-10-azacyclododecan-12-olide, component of the defensive secretion of the Mexican bean beetle *Epilachna varivestis*, synth from methyl 9-ketododecanoate and from *N*-hydroxyethyl lactam, 2141, 2145
of *Scrobipalpula absoluta*, tomato leafminer, structure determination, 411
sordidin(1-ethyl-3,5,7-trimethyl-2,8-dioxabicyclo-[3.2.1]octane), male-produced aggregation pheromone of the banana weevil *Cosmopolites sordidus*, synth and absolute configuration, 3741

Phosphazenes

– base P_2-Et for isomerization of vinylic to allylic sulfones, 5247
– base P_4-t-Bu, use in alkylation of vinylic sulfones, 5249
phosphorus-containing dendrimers with *N*-allyl and *N*-diphenylphosphinomethyl terminal groups on generations 1-7 around a triphosphazene nucleus, 9053
N-vinylic phosphazenes, aza-Wittig reaction with carbonyl compds, synth of dihydropyridines and pyridines, 6379

Phosphenes

E-bis(2,4,6-tri-t-butylphenyl)diphosphene, synth from 1,2-bis(2-bromo-3,5-di-t-butylphenyl)ethane *via* reaction with (2,4,6-tri-t-butylphenyl)-phosphide, 7815

Phosphenium salts

1,3-di-t-butyl-2-chloro-1,3,2-diazaphospholeįonic (phosphenium cation) character compared with its 4,5-dihydro analogue, 9025

Phosphine imines

N-alkoxycarbonylphosphazenes and DMAD, formation of 1*H*-1,2λ^5-azaphosphinin-6-ones, 2841
phosphinimines as intermediates in the prep of urea-linked β-cyclodextrin dimers from 6-mono-

azido-6-monodeoxy-β-cyclodextrins, 4011
use in 1-acyl-β-carboline synth, access to marine alkaloids, 9353
use in carbodiimide and 2,3-dihydro-6*H*-pyrimido[2,1-*b*]quinazolin-4(1*H*)-one synth, 9071

Phosphine oxides

S or *R* β-hydroxy phosphine oxides, synth by reduction of β-keto phosphine oxide oxazolidine and reaction of an oxazolidine aldehyde with a lithiated phosphine oxide, 3051
allenyl diphenyl −, addition of hydroxylamine, synth of β-hydroxyiminoalkyl − and their condensation with ketones forming αβ-unsaturated oximes, 1289
γ-benzyloxy phosphine oxides, intramolecular acylation with LDA, synth of optically active cyclopropyl ketones, 1501
bi- and tridentate doubly *P*-chiral diphosphine dioxide ligands and tertiary *P*-chiral phosphine oxides, synth from lithiated t-butylphenylphosphine oxide, 4729, 4733
diphenylphosphinoyl lactones in the control of remote stereochemistry, 2105
hydroxy-alkylation, silylation, alkylation reactions of lithium derivs of chiral phosphine oxides and acylation of phosphine oxides, 7461, 7465
anti-β-hydroxyphosphine oxides, synth by $TiCl_4$ mediated $LiBH_4$ reduction of β-ketophosphine oxides, 7421
lithiated −, instability of configuration using Hoffmann test, 4271
by [2,3]-rearrangement of difluoroallylic alcohols with C-P bond formation, 6403

Phosphine ylids

see Phosphoranes

Phosphines

aminoacids containing Ph_2P groups, incorporation into peptides on polymer support, complexation with Rh(I) and chiral hydrogenations, 6475
biphenyl 2,2′-diphosphines, synth in chiral forms, configurational changes at P, 5347
bis(aminophosphine)-Ni(0) complexes as catalysts for allylation of malonate esters, 6105
1*R*,1′*R*-2,6-bis[1-(diphenylphosphino)ethyl]pyridine, use in asymmetric transfer hydrogenation, 797
bis(trimethylsilyloxy) −, *in situ* generation and cyclo-alkylation by bis-(benzylic bromides), synth of 2-hydroxyisophosphindoline 2-oxide, 2-hydroxy-2,3-dihydrobenzo[*de*]phosphinoline 2-oxide, 5425
borane protected and free polyfunctional chlorodiorganophosphines, synth by using zinc organometallics, 2209
chiral amidophosphine ligand, structural requirements for asymmetric reaction of lithium dimethylcuprate with chalcone, 7805
2-cyanoethoxy(*N,N*-diisopropylamino)-3-nitro-1,2,4-triazolylphosphine, synth as a new phosphitylating reagent for generation of deoxyribonucleoside phosphoramidites, 331
diastereomeric diphosphines, synth by addition of diphenylphosphine-borane complex on an activated diene prepared from mannitol, catalytic α-acetamidoacrylic acid hydrogenolysis, 4713
2,6-dimethyl-9-phenyl-9-phosphabicyclo[3.3.1]-nonane, chiral synth and application as ligand in allylic substitution, 7565
diphenylphosphino group introduction into chiral 1,1′-di(2-oxazolinyl) ferrocenes, effect of solvent and lithiating agent, 6137
2,2′-bis(diphenylphosphino)biphenyl, calculation of the activation barrier to axial torsion, 47
homogeneous $Pt(COD)Cl_2/PPh_3$ as catalyst for vinylation of aryl iodides, 8917
lithio-bisdiethylaminophosphine borane complex, alkylation, synthetic equivalent of $Cl_2PBH_3^-$, synth of functionalized phosphines and diphosphines, 6099
$NiCl_2(PPh_3)_2$ as catalyst for coupling of lithium organoborates and aryl mesylates and tosylates possessing an electron withdrawing group, 8531
$Ni(PPh_3)_2Cl_2$ as catalyst for alkylation and hydride addition of allylic ethers, 3613
palladium-chiral phosphine catalyst for elimination reaction of (±)-8α-methoxycarbonyloxy-4aβ-methyl-2,3,4,4a,5,6,7,8-octahydronaphthalene, importance of chirality reversal depending on the palladium-chiral phosphine ratio, 7115
(phosphino-1,3-oxazine)palladium catalyst for enantioselective allylic substitution, 9143
Ru[(*R*)-2,2′-bis(diphenylphosphino)-1,1′-binaphthyl]$(O_2CCH_3)_2$ as catalyst for asymmetric hydrogenation of *N*-tosylimines, 6669
ruthenium complexes of chiral phosphinooxazolines as catalysts for enantioselective transfer hydrogenation of alkyl aryl ketones, 1381
C_2-symmetric dimethyl 2,2′-bisdiphenylphosphinoferrocene-1,1′-dicarboxylate, synth and use as chiral ligand in Pd-catalyzed allylic alkylation, 7995
TolBINAP-Pd(II) complexes as catalysts for asymmetric 1,3-dipolar cycloaddition to olefins, synth of isoxazolidine, 5947

tricyclohexylphosphine-trifluoromethanesulfonyl oxyborane and tricyclohexylphosphine-bis(trifluoromethanesulfonyloxy)-borane, synth and properties of, 503
tridentate P,N,P ligands with twofold chiral symmetry from 2,6-di(chloromethyl)pyridine with 2,5-dimethylphospholane, and 2,6-di(1-mesyloxyethyl)pyridine with Ph_2PK, 4933, 4937
triphenylphosphine, reaction with dialkyl phosphite and diisopropyl azodicarboxylate followed by addition of alcohol, synth of trialkyl phosphite, 1087

Phosphinic acids and derivs
1-aminoalkylphosphinic acids, polymer bound synth using 9-alkylideneaminoxanthen-3-yloxymethyl polystyrene and bis(trimethylsilyl) phosphonite, 1647
ammonium hypophosphite, silylation, cyclo-alkylation by bis-(benzylic bromides), synth of 2-hydroxyisophosphindoline 2-oxide, 2-hydroxy-2,3-dihydrobenzo[*de*]phosphinoline 2-oxide, 5425
chiral phosphinamides derived from prolinols for enantioselective catalysis of ketone reduction by diborane, 2853
dibutylphosphinothioic-phosphonic mixed anhydride, use in stereocontrolled synth of nucleoside methylphosphonate methyl ester diastereomers, 4853
hypophosphorous acid, removal of bromide and iodide groups in halobenzoic acids and other substrates, 5367
intramolecular Arbuzov reactions of dialkyl phenylphosphonites initiated by anodic oxidation; formation of alkylphenylphosphinate esters, 1625
methyl phosphinate, synth by reaction between phosphinic acid and trimethyl orthoformate, 425
phenylphosphinic acids, synth by alkylation and acylation of bis(trimethylsilyl) phenylphosphonite, 1651
phosphotyrosine mimetics, synth from the corresponding phenolic precursors, 3635
N-protected α-aminoalkylphosphinic acids, synth by a three-component condensation reaction of benzyl carbamate, an aldehyde and an alkylphosphonous acid, 4335

Phosphinous acids and derivs
tridentate P,N,P ligands from 2,6-di(1-hydroxyethyl)- and 2,6-di(hydroxymethyl)-pyridines with Ph_2PCl, 4933, 4937

Phospholipids
erythro-ω-aminosphingosine, synth from L-serine and its coupling to Affi-Gel 10 to create an affinity column for sphingosine kinase purification, 3279
2,6-anhydro-3-deoxy-5-*O*-phosphono-3-tetradecanamido-4-*O*-[3-(tetradecanoyloxy)tetradecanoyl]-D-*glycero*-D-*ido*-heptonic acid, endotoxin antagonist, synth, and of dimer, 7271
glycerol-deuteriated ether –, synth, 5705
lyso– containing unsaturated fatty acid chains, synth, 7871
72-membered macrocyclic phospholipid which is a unimolecular version of the two-molecule unit spanning a membrane bilayer, synth, 323
phosphatidylinositol 3,4-bisphosphate, synth of a tritiated benzophenone-linked photoaffinity analogue, 9017

Phosphonic acids and derivs
acetylenic –, synth *via* 4-alkylideneisoxazol-5-ones, 8735
acyclic nucleoside phosphonic acids in the purine and pyrimidine series, prep *via* Michael addition, 4701
alkenylphosphonate esters, synth and conjugate addition of lithiated Schöllkopf bislactim ether, stereocontrolled synth of 2-amino-4-phosphonobutanoic acids, 5801
α-alkoxy-α-fluoromethanephosphonates, synth and incorporation into acyclic phosphonate nucleosides, 8975
alkylphosphonates, addition of nitriles and reaction with enones, synth of pyridines, 4577
1-alkynylphosphonates, synth from diethyl trichloromethylphosphonate and aldehydes *via* formation of α-chlorovinyl phosphonate intermediates, 1783
α-amino phosphonate monoesters, synth from phosphonic acid using BroP or TPyC1U as activating agent, 3997
α-amino phosphonates and phosphonic acids by condensation of imines with Wang resin bound H-phosphonates, 5457
1-aminophosphonic acids, synth by reduction of 1-hydroxyiminophosphonates with $NaBH_4$ in the presence of molybdenum or nickel, 407
ammonium aryl *H*-phosphonates, use in conversion of 5′-*O*-(dimethoxytrityl)-2′-deoxynucleoside derivs into 3′-*H*-phosphonates, 8621
anion derived from diethyl α-fluorobenzyl phosphonate and lithium diisopropylamide, reaction with aldehydes and ketones to provide phenyl

substituted fluoro-olefins, 629
asymmetric hydrophosphonylation of 2,2,5,5-tetramethyl-3-thiazoline, use of chiral Ti and lanthanide catalysts, 9291
benzylic mono(α,α-difluoromethylphosphonates) and benzylic bis(α,α-difluoromethylphosphonates), synth *via* electrophilic fluorination of the corresponding benzylic phosphonates, 8089
CMP-NeuNAc analogues having a glycosyl phosphonate structure, synth by nucleophilic substitution of sialyl phosphite with dimethyl trimethylsilyl phosphite followed by Mitsunobu condensation, 1451
cycloalkylphosphonates, electrosynthesis from diisopropyl trichloromethylphosphonate using magnesium electrochemical activation, 3679
5′-deoxy-5′-methylidyne phosphonate linked thymidine oligonucleotides, synth and preliminary biochemical studies, 6239
dichloromethanediphosphonic acid, synth of *P,P*-dialkyl diesters, 3533
2-diethoxyphosphonyl-1-alkoxy-3-methylpenta-1,3-dienes, synth by reaction of lithiated dianion of diethyl α-trimethylsilyl-prenylphosphonate with alkyl formates, 2951
diethyl diazomethylphosphonate, reaction with *N*-tosyl- and *N*-benzhydrylazetidin-3-one, synth and trapping of intermediate *N*-substituted-3-azetidinylidenecarbenes, 8101
diethyl ketovinylphosphonate, Diels-Alder reactions of with cyclopentadiene and *E*-1-acetoxy-1,3-butadiene or furan, 2149, 2153
diethyl(ethoxycarbonyl)fluoromethylphosphonate, acylation of using magnesium chloride-triethylamine, synth of α-fluoro β-keto esters, 653
(diethylphosphonyl)difluoromethylcadmium halides, CuCl-promoted coupling with aryl iodides, 2745
α,α-difluoromethylene phosphonothioic acids, 2,2-disubstituted-1,1-difluorophosphonates and phosphonothioates, synth, 2229, 2233
α,α-difluoromethylenephosphonates and α,α-difluoromethylenephosphonothioates, efficient interconversion of, use in conversion of aldehydes to difluoromethyl ketones, 4707, 4711
dimethyl (*S*)-*p*-tolyl-sulfinylmethylphosphonate, reaction with a suitable Grignard reagent, synth of enantiomerically pure sulfoxides, 6017
heterobiarylmethylphosphonates, synth by Stille coupling between diethyl bromobenzylphosphonates and heterocyclyl tributyl stannanes, 7611
N-hydroxy-α-amino phosphonate derivs, potential haptens, synth by Mitsunobu reaction with *N*-phenoxycarbonyl-*O*-t-butylalkoxycarbonyl hydroxylamine and α-hydroxyphosphonates, 6331
α-hydroxyphosphonates, synth using natural phosphate, natural phosphate doped with potassium fluoride and sodium phosphate dodecahydrate without solvents, 3999
α-hydroxyphosphonates, synth on Wang resin, 6073
β-ketophosphonates and β-ketothiophosphonates, hydrogenation with Ru(II) catalysts, synth of β-hydroxyphosphonates substituted with a thienyl ring, 7721
lithium difluoromethylenephosphonate in the Wadsworth-Emmons reaction, 5881
nucleoside methylphosphonate methyl ester diastereomers, synth from mixed dibutylphosphinothioic-phosphonic anhydride, 4853
oligomers containing a *N*-2-hydroxyethyl-aminomethylphosphonate backbone, a novel PNA analogue, synth, 7857
oligonucleoside methanephosphonates, elimination of transamination side products by use of dC^{Ac} methanephosphonamidite, 8691
3′-phosphonate analogues of 2′,3′-dideoxynucleosides, synth from β,γ-epoxyphosphonate, 4297
phosphonic acid analogue of KDO, synth, 1595
5-phosphono-linked thymine dinucleotides, synth, 6457
4-phosphonomethyl-1,4-dihydropyridines, synth *via* corresponding 4-chloromethylpyridines, 6033
O-phosphonomethylene nucleoside derivs, synth, structures, 3497
phosphotyrosine peptide (Stat $91^{695-708}$), synth using an inter-assembly phosphorylation strategy, 4765
phthalocyanine derivs bearing phosphonate substituents directly bound to the aromatic rings of the phthalocyanine, synth from 4-iodophthalonitrile, 5831
thienylmethyl phosphonates in Horner reactions forming thienylethenyl benzenes, styrenes and thiophenes for non-linear optics, 7279

Phosphonium salts
acyl tributyl –, reaction with Grignard reagents, synth of ketones, 5381
autoxidation of, synth of symmetrical *Z*-olefins, 7703
of 6-bromomethyl-6′-methyl-2,2′-bipyridine and 2-chloromethyl-pyridine, reaction with mono-

formyl-tris-(*p*-Bu^t)calix[4]arene, synth of conjugated bipyridyl and pyridyl podands, 6311
storable powder mixtures of – and KH, use as "instant ylids", 9047
thiazol-4-ylmethyl phosphonium salts, prep and Wittig condensation of, synth of 2,4-disubstituted thiazoles, 983
triphenylporphyrinylmethylphosphonium iodides by reaction of trimethyl(porphyrinylmethyl) ammonium iodides with triphenylphosphine, subsequent hydrolysis yields *meso*-methylporphyrins, 7147

Phosphonothioic acids and derivs
benzylic phosphonothioic dichlorides, nucleophilic substitution in, formation of a diamide without intervention of the amidic chloride, 8247
α,α-difluoromethylene phosphonothioic acids, 2,2-disubstituted-1,1-difluorophosphonates and phosphonothioates, synth, 2229, 2233
α,α-difluoromethylenephosphonothioates and α,α-difluoromethylenephosphonates, efficient interconversion of, use in conversion of aldehydes to difluoromethyl ketones, 4707, 4711

Phosphonous acids and derivs
bis(trimethylsilyl) phenylphosphonite, alkylation and acylation, synth of phenylphosphinic acids, 1651
bis(trimethylsilyl) phosphonite and phenylphosphonite, use in synth of polymer-bound 1-aminoalkylphosphinic acids, 1647
intramolecular Arbuzov reactions of dialkyl phenylphosphonites initiated by anodic oxidation, 1625
three-component condensation reaction of an alkylphosphonous acid, benzyl carbamate and an aldehyde, synth of *N*-protected α-aminoalkylphosphinic acids, 4335

Phosphoramidates
dodecathymidine phosphoramidate (P-NH_2), duplex formation with complementary DNA and RNA strands, effect of the anomeric configuration on the thermal stability of, 5869

Phosphoramides
chiral phosphoramides as catalysts for asymmetric allylation of aldehydes, synth of chiral homoallylic alcohols, 5149

Phosphoramidites
cyclic phosphoramidites, conversion into phosphite triesters and dinucleotide phosphorothioates using 2-bromo-4,5-dicyanoimidazole as a catalyst, 969, 973, 977
deoxyribonucleoside phosphoramidites, generation using 2-cyanoethoxy(*N,N*-diisopropylamino)-3-nitro-1,2,4-triazolylphosphine as phosphitylating reagent, 331
3-*O*-dimethoxy-2-*O*-phosphoramidites by functionalisation of propane-2,3-diols, 3931
methidium intercalator phosphoramidite, synth and incorporation into an oligonucleotide, 8467
phosphoramidite with an aminopropyl group at the N^2-position of 2′-deoxyguanosine, incorporation into an oligonucleotide, 7675

Phosphoranes
(3-alkoxycarbonyl-oxo-propylidene)triphenylphosphorane, reaction with 1,2-diacylethylenes, synth of cyclopentenones, 401
alkyl (triphenylphosphoranylidene)acetates, unexpected alkylation of amines, acids and phenols by, 1233
5-arylimino-4-chloro-5*H*-1,2,3-dithiazoles, reaction with stabilised –, ring cleavage following attack at S, 869
benzoylmethylene(triphenyl)phosphorane, reaction with 10-(methoxyimino)phenanthren-9-one, synth of 1-methoxy-1*H*-phenanthro[9,10-c][1,2]-oxazine, conversion to triphenylene-*o*-dicarboxylates, 1097
4-carboxybutylidene triphenylphosphorane, double Wittig reaction of, key step in synth of benzene derivs metasubstituted with ω,ω′-difunctionalised six-carbon chains, 1393
β-ferrocenylvinyliminophosphoranes, aza-Wittig reactions of, synth of β-ferrocenylvinylheterocumulenes and ferrocene-containing imidazole rings, 7829
medium-ring lactones, reaction with unstabilized phosphonium ylids, formation of olefinic alcohols, 3853
reaction of 3-ethoxycarbonylprop-2-enylidene triphenylphosphorane with glyoxals, *cis*-jasmone synth, 5735
spiro– with 2,1-benzoxaphospholine rings and P-H bond, conversion into P-H (apical) 2,1λ^5-benzoxaphospholine, structure, cyclization with H_2 loss, 8409
for Imino- *see* Phosphineimines

Phosphoric acid and derivs
axially substituted *trans*-3-chloro-2,4-dioxa-3λ^5-phosphabicyclo[4.4.0]decan-3-one, reaction with *O*- and *S*-nucleophiles in the presence of DBN or DBU, 2217
molecular sheets of 1,2-bis(2′-tetrahydropyrimidyl)ethane and dihydrogenopyrophosphate ribbons interconnected through $H_2P_2O_7^{2-}$ anions by hydrogen bonds, synth, 1405

adenophostin A, tetraphosphorylated disaccharide nucleoside with IP_3 receptor agonist properties, synth, 3599
D-arabinohydroxamic acid 5-*O*-phosphate, synth as a transition state analogue inhibitor of glucose-6-phosphate isomerase, 1221
bis-glycolaldehyde phosphate ester, intramolecular aldol reactions, tetrose cyclic phosphate synth, 5779
bis-ketol phosphate triesters, rate of initial ketol group hydrolysis, 1169
crown nucleoside monophosphate diesters, prodrugs with anti-HIV activity, 3101
cyclo-2,3-diphospho-D-glycerate, synth from D-mannitol involving cyclisation of methyl 2,3-diphospho-D-glycerate using dicyclohexylcarbodiimide, 355
diphenyl chlorophosphonate for synthesis of glycosyl chlorides under basic conditions, 4903
farnesyl and geranylgeranyl pyrophosphate analogues incorporating benzoylbenzyl ethers, synth from geraniol, inhibitory activity against farnesyltransferase, 8833
fluoroapatite (natural phosphate) doped with KF and trisodium phosphate, catalyst for hydration of nitriles, 6555
1D-*myo*-inositol series, synth of 1D- and 1L-1,2:4,5-di-*O*-cyclohexylidene-3-*O*-allyl-*myo*-inositols as intermediates in route to, 5081
D-*myo*-inositol 1,4,5-trisphosphate, synth of metabolically stable analogues, 1917
non-protected thymidine or carbohydrates, phosphorylation at the primary alcohol of by hydrogen phosphonate, synth of 6-(mannopyranosyl), 6-(glucopyranosyl) or 5′-(thymidinyl)-phosphodiesters, 5123
nucleoside phosphorofluoridate, phosphorofluorido-thioate and -dithioate monoesters, synth, 5739
phosphate substituted radicals, S_N1 substitution reactions induced by radicals, 4365
phosphate triesters by Sn-mediated phosphorylation, 1953
purine nucleoside acyldiphosphates and acyltriphosphates, synth, 8739
ribonucleoside monophosphates, transport through liquid organic membranes using a carrier mixture of lipophilic boronic acid and bis-(quaternary ammonium cation), 6303
see also Inositols, Nucleic acids, Nucleosides, Phospholipids

Phosphoroamidates
N,N′-dialkylphosphorodiamide protecting groups for Fmoc synthesis of phosphotyrosine-containing peptides, 4953

Phosphorothioic acids and derivs
nucleoside phosphorofluoridate, phosphorofluorido-thioate and -dithioate monoesters, synth, 5739
oligodeoxynucleoside phosphorodithioates, chemoselective coupling on solid phase using PyNOP and PyFNOP, 8041
P-chiral phosphorothioic acid analogues of *N*-phospholeucinamide, 8979
phosphorodithioate RNA, synth by H-phosphonothioate method on solid support, 4451
phosphorus-containing dendrimers with *N*-allyl and *N*-diphenylphosphinomethyl terminal groups on generations 1-7 around a triphosphazene nucleus, 9053
3′-thiouridylyl-(3′→5′)-uridine, synth, hydrolysis rates, 925

Phosphorous acid and derivs
aryl nucleoside H-phosphonate diesters, transesterification, new method of internucleotide bond formation, 4561
dibenzyl phosphite with CCl_4/base for phosphorylation of phenols, 771
phosphite triesters from cyclic phosphoramidites using 2-bromo-4,5-dicyanoimidazole as a catalyst and from a bicyclic imidazo-oxazaphosphorine, 969, 973, 977
synth of *N*-pent-4-enoyl oligonucleotides and thiophosphoryl and phosphoramidoyl oligonucleotides on polymer support by H-phosphonate (monoalkyl phosphite) method, 1539, 1543
trialkyl phosphite by treatment of dialkyl phosphite with triphenylphosphine and diisopropyl azodicarboxylate followed by addition of alcohol, 1087
trialkyl phosphites, Lewis acid promoted reaction with *o*-phthalaldehyde, synth of 1-dialkyloxyphosphorylisobenzofuran, 5963
tridentate P,N,P ligand with twofold chiral symmetry from 2,6-di(hydroxymethyl)pyridine and binaphthol chlorophosphite, 4933

Phosphorus compds
hypophosphorous acid, removal of bromide and iodide groups in halobenzoic acids and other substrates, 5367
lithio-bisdiethylaminophosphine borane complex, alkylation, synthetic equivalent of $Cl_2PBH_3^-$,

synth of functionalized phosphines and diphosphines, 6099
phosphorus-containing dendrimers with *N*-allyl and *N*-diphenylphosphinomethyl terminal groups on generations 1-7 around a triphosphazene nucleus, 9053

Phosphorus halogen compds
nucleoside phosphorofluoridate, phosphorofluoridothioate and -dithioate monoesters, synth, 5739

Phosphorus heterocycles
1*H*-1,2λ^5-azaphosphinin-6-ones from *N*-alkoxycarbonylphosphazenes and DMAD, 2841
2,1λ^5-benzoxaphospholines with apical P-H, synth, structure, cyclization with H_2 loss, 8409
dibenzo[*b,f*]phosphepin 5-oxides, synth using bromine/lithium exchange, 5609
1,3-di-t-butyl-2-chloro-1,3,2-diazaphospholejonic (phosphenium cation) character compared with its 4,5-dihydro analogue, 9025
2-hydroxyisophosphindoline 2-oxide, 2-hydroxy-2,3-dihydro-1*H*-benzo[*de*]phosphinoline2-oxide, synth, 5425
oxazaphospholidine oxides as catalysts for enantioselective reduction of ketones by borane, 39
2-phenyl-1,3,2-oxazaphospholidine 2-oxides, chiral catalysts in diborane reductions, 8351
phospholanes by zirconocyclization of diallylphosphines, synth of chiral phosphines, 3109
1,3,5,7-tetra-t-butyl-4,8-diphospha-*s*-indacene (dicyclopenta[*b,e*][1,4]diphosphinin system), synth, UV, 3829

Phosphorylation
dibenzyl phosphite with CCl_4/base for − of phenols, 771
Lewis acid promoted reaction of *o*-phthalaldehyde with trialkyl phosphites, synth of 1-dialkyloxyphosphorylisobenzofuran, 5963
lysophospholipids containing unsaturated fatty acid chains, use of $(PhCH_2O)_2PN(CHMe_2)_2$, 7871
phosphate triesters by Sn-mediated −, 1953
at the primary alcohol of non-protected thymidine or carbohydrates by hydrogen phosphonate, synth of 6-(mannopyranosyl), 6-(glucopyranosyl) or 5′-(thymidinyl)phosphodiesters, 5123
solid-phase − for prep of phosphoserine- and phosphothreonine-containing peptides, 8227

Photochemistry
alkyldiazomethanes, conformational effects on 1,2-hydrogen migration in excited state, 7209
arene-alkene photocycloaddition-radical cyclisation cascade sequence for synth of *cis,cis,cis, trans*-[5.5.5.5]-fenestranes from toluic acid derivs, 7687
aryl tropylium ions, synth by photoinduced and thermal electron transfer from the arylcycloheptatrienes, 7493
1,2-azidohydroperoxides by photooxygenation of alkenes in presence of azide ions, photoinduced electron transfer mechanism, 8367
azulene-containing donor-acceptor molecules, synth as second-order nonlinear chromophores, 419
bacterial photosynthetic reaction centres, synth of accurate distance models of the primary donor-primary acceptor pair of, 6807
synth of a [2.2](3,3′)biphenylo(3,6)phenanthrenophene, mixed [2.2]cyclophane formed by photocycloaddition, synth, NMR, UV,fluorescence, 3877
1,4-biradical intermediates in intramolecular photocycloaddition of cyclopropene carboxylic acid allylic esters, formation of 5-oxaspiro[2,4]-hept-4-ones, 8879
bis(bicyclo[1.1.1]pentane-1-carbonyl) peroxide, laser flash photolysis, bicyclopent-1-yl radical generation, 8059
cleavage of imidazole ring in bredinin, nucleoside antibiotic, 187
N-cyclohexenyl-*N*-phenyl arylamides, removal of cyclohexenyl group under oxidative photolysis conditions, 3169
3-cyclopropylpropanoyl pyrazine, a radical clock to probe biradical lifetimes, 8629
dehydrodimerizations of cyclic ethers, Hg-sensitized, formation of monocyclic products produced by opening of one ring, 6853
dihydrobenzocyclobutene synth by acid-catalyzed intramolecular photocyclization of 3-alkenyloxyphenols, 2027
14c,14d-dihydro-14c,14d-dimethyldibenzo[*e,l*]pyrene, synth and reversible photo-isomerisation to a tetrabenzo[*ab,d,fg,i*][10]annulene, 5239
9,10-dihydro-9,10-ethenoanthracene anionic derivs, rearrangement by triplet sensitization from amino-ketone cations in solid state, 6037
m-dinitrobenzene, photoreactions with C-nucleophiles in presence of TBAF, 7591
1,3-diphenylpropenyl radical, laser photolytic generation from 1,3-dichloro-1,3-diphenylpropane by two-photon process, UV detection,

4923
of 8,9-diphenyltricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one, [1,3]sigmatropic rearrangement *via* a singlet excited state and [2+2] intramolecular cycloaddition *via* a triplet excited state, 7065
dye-sensitised photooxidation of t-butyl 3-methoxypyrrole-2-carboxylate in methanol, synth of t-butyl 3,5-dimethoxypyrrole-2-carboxylate and a bipyrrolic oxidative coupling product, 6657
electron-transfer induced deprotonation of pinenes: ring-closed vinylcyclobutane cation radicals, 2385
electron-transfer induced electrocycloreversion of benzocyclobutenols, generation of *o*-quinodimethane intermediates which tautomerise to benzophenones, 5547
exciplex fluorescence in inclusion complexes of naphthalene derivatives, 4833
fused cyclobutanes by intramolecular photochemical [2+2] cycloadditions, biradical conformation control, 1641
generation of Ar_2C in TFE by photolysis of 1-(diarylmethyleneamino)-2,3-diphenylaziridines, carbene protonation, nanosecond LFP, 1197
hydroxymethylation of protoberberine alkaloids, synth of (±)-solidaline, 3575
2,2′-indolylindolines, photooxidation to 2,2′-biindoles, ditryptophan crosslink formation, 5629
intramolecular [2+2] photocycloaddition of 6-alkenyl-2,3-dihydro-4-pyrones and rearrangement of the products, 1663
intramolecular [2+2] photocycloaddition of alkene-enones photosubstrates, trapping of 1,4-diradical intermediates in, 8941
intramolecular [2+2] photocycloaddition-fragmentation approach to synth of asteriscanolide, 2177
irradiation of 1-aroyl-2-methylenepyrrolidines and their pyrrolidine congeners, synth of benzo[*b*]quinolizin-6-ones and enaminoketones, 7749
irradiation of solution containing 1,1-dicyano-2-phenylethene or 1,2,4,5-tetracyanobenzene with 2,2-dimethylcyclopropanone silyl acetal in the presence of phenanthrene, introduction of a C_3 unit, 2975
– of ketones in zeolites, role of water, 4861
4-methoxy-2-pyridone, [4+4] photocycloaddition to other 2-pyridones, but not to itself, 1141
of 3-nitro-2-cyclohexenone, 3939
oxidation of ethers to esters by photo-irradiation with benzil and oxygen, 4179
Paterno-Büchi reaction of allenes with aldehydes, substituent effects on regiochemistry, 8651
photo-assisted annulation in synth of 1,3-dihydro-2*H*-imidazo[4,5-*b*]quinolin-2-ones, 1937
photo-fragmentation of 3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane through a C-O bond cleaved 1,6-diradical intermediate, 8181
photo-Fries reaction of naphthyl esters within zeolites, 6251
photo-inhibition of yeast protein farnesyltransferase by benzoylbenzoate analogues of farnesyl pyrophosphate, 4845
photo-oxygenation of trisubstituted alkenes, rate-determining formation of perepoxide, 4105
photo-triggered selective C-terminal *N*-methylamidative cleavage of polyethyleneglycol-bound peptides, 6421
photoactivated "caged" ATP, *p*-hydroxyphenacyl ATP, efficient and rapid release phototrigger for ATP, 6259
photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones, synth of spiro-ethers, -ketals, 3521
photoannulation of keto-acetals by Norrish type II reaction, synth of systems related to zaragozic acid, 4883
photochemical cleavage of cyclohexa-2,4-dienones under irradiation with visible light, 3631
photochemical dichloromethylation of methylarenes, synth of the corresponding dichloromethyl analogues, 8217
photochemical rearrangements of 9,10-disubstituted triptycene-1,4-quinone derivs, mechanisms, 2121
photocycloaddition of 1-naphthalenecarbonitrile to furan, *endo* and *exo* [4+4] cycloadducts, and [2+2] product from Cope rearrangement of the latter, 9329
photocycloaddition of Kemp's imide-linked coumarin and thymine, molecular recognition, 8523
photocycloaddition of norbornadiene to naphthalene-1-carbonitrile, 4895
photocycloadditions of acrylonitrile and crotononitrile to 2-methyloxazolo[5,4-*b*]pyridine, isolation of fused azocines and bridged structures, 5783
[6+6]-photocycloadditions in face to face benzo/pyridazino systems, approach to diazapagodanes, 4491
photodecarbonylation of 2-phenyl-4-alkylidene-5(4*H*)-oxazolones, 4019
photoinduced electron transfer reactions of cyclopropanone acetal with conjugated enones in the presence of a redox-type photosensitiser, 1833

photoinduced electron transfer reactions using photosensitisers covalently anchored on silica, 381
photoinduced through-bond electron transfer and rearrangement in *N*-[ω-(*p*-nitrophenoxy)alkyl]-anilines, 505
photoirradiation of 5-halouracil-containing oligonucleotides, evidence for intrastrand C2′-hydrogen abstraction by using stereospecifically C2′-deuterated deoxyadenosine, 1805
photoirradiation of $MeOH/C_6H_6$ solution of 3-cycloalkenyloxy chromone, synth of spiropyrans, 8913
photolysis of 3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivs, synth of 2-acetylaniline derivs *via* arylnitroxyl radicals, EPR spectroscopy, 2895
photolysis of a Diels-Alder adduct obtained from reaction of furan with cyclopropene, synth of 3-oxatetracyclo[3.3.0.$0^{2,8}$.$0^{4,6}$]octane, 1385
photolysis of *N*-alkyl-*N*-allyl-2-carboxamidocyclopent-2-enones, competition between intramolecular [2+2] photocycloaddition and hydrogen-abstraction reaction, 5885
photolysis of spiro[2,5]octa-1,4-dien-3-ones, reversible biradical formation and biradical-olefin cycloaddition, 5853
photooxidation of adamantylideneadamantane, trapping of the perepoxide intermediate by sulfenate and sulfinate esters, 2911
photooxidation of stilbenes, electron transfer within zeolites, 5235
photooxygenation of α,α′-dimethylstilbenes sensitised by photochromic compds, 5127
photoreaction of cyclic ketene silyl acetals with 2-naphthaldehyde, synth of 2-siloxy-2-alkoxyoxetanes, 5901
photosensitized defluorination of saturated perfluorocarbons, 2373
radical photo-addition of 1,3-dithian-2-yl phenylselenide to electron-deficient alkenes, 2743
regioselective intramolecular photocycloaddition of 1-cyano-2-(2-oxa-4-alkenyl)naphthalenes in the presence of Eu(III) salt, salt and solvent effects, 7775
sensitised photo-oxygenation of allylic alcohols, solvent effects, 7159
sequential multi-photon – of sterically congested enones, use of high intensity Ar laser jet to observe primary photoproduct, 2317
solid state photochemistry of 2,4,6-triisopropylthiobenzophenone, C=O...H versus C=S...H abstraction geometry, 2125
stereoselectivity in photocycloaddition of methyl trimethylpyruvate to 2,2-diisopropyl-1,3-dioxole, 1195
stilbene oxidative photocyclization in synth of [7]phenacenes, 7173
sulfonamido radical generation by diacetoxyiodobenzenes, I_2 and light, formation of 1-sulfonyltetrahydroquinolines, 6129
thermal and photo-chemistry of 1,4-methano-1,4-dihydronaphthalene (benzonorbornadiene) included in Li-exchanged zeolite, 5297

Photodynamic therapy
phthalocyanine derivs bearing phosphonate substituents directly bound to the aromatic rings of the phthalocyanine, synth for use in PDT from 4-iodophthalonitrile, 5831
spirochlorin and allylidenechlorin, possible photosensitisers for PDT, formation by reaction of bromovinylporphyrin with tetracyanoethylene, 5931

Photoelectron spectra
see Electronic spectra

Phthalazines
nucleophilic heteroaromatic substitution of halide by alkoxide in –, pyridazines, thiazole and thiadiazoles, amide ions as activating groups, 4065
phthalhydrazide libraries, synth in solution from substituted hydrazines and phthalimides, 3351
tetra- and hexa-hydrophthalazine 5,8-endoperoxides, synth, 921

Phthalocyanines
iron and manganese –, homogeneous catalysts for oxidation of naphthalenes by peracetic acid, 1637
phthalocyanine derivs bearing phosphonate substituents directly bound to the aromatic rings of the phthalocyanine, synth from 4-iodophthalonitrile, 5831

Phytoalexins
colletofragarones A1 and A2, conidial germination self-inhibitors of fungus *Colletotrichum fragariae*, structure, 5731, corrig. 8823
dihydro-12-oxophytodienoic acid and jasmonic acid, synth of homologues by mixed Kolbe electrolysis, 8715
gramicidin A, peptide produced by *Bacillus brevis*, selective tryptophan replacement with aspartic acid, 5199
(*R*)-(+)-lasiodiplodin and de-*O*-methyl lasiodiplodin, plant growth inhibitors from fungus *Botrysdiplodia theobromae*, synth by ring-closing metathesis, 7005

(±)-lubiminol, spirovetivane –, synth by rearrangement of cyclobutyl carbinyl precursor, 8703
penigequinolones A, B, dihydroquinolinones from *Penicillium* sp., pollen growth inhibitors, 4961
sorgolactone, germination stimulant, synth, 3491
syringolide 2, elicitor metabolite of *Pseudomonas syringae* pv. *tomato*, synth from xylulose, 3557
viburnols A-E, rearranged dammarane triterpenoids from *Viburnum dilatatum*, structure, 4157

Pictet-Spengler reactions
of Merrifield resin-bound tryptophan with aldehydes, synth of tetrahydro-β-carbolines, 3963, 5041, 5631
of the methyl ester of abrine alkaloid with aldehydes, synth of N_b-methyl-1,2,3,4-tetrahydro-β-carbolines as promoters in addition of diethylzinc toward aromatic aldehydes, 5971
on solid supports, using tryptophan linked to the Kaiser oxime resin and aldehydes, synth of 1,2,3,4-tetrahydro-β-carboline derivs, 3963

Pigments
aphid pigment derivs, metal-mediated diastereoselective synth through use of metal phenolates derived from naphthol, 7851
dipyrromethenone synth for C,D rings of phytochrome and phytochromobilin, 6069
pheomelanins, oxidation with hydrogen peroxide, synth of 2-carboxy-4-hydroxy-6-(2-amino-2-carboxyethyl)benzothiazole, 6799
see also Bilins

Piperazines
see Pyrazines

Piperazinones
1-benzylpiperazin-2-one nitrone, synth from 4-(t-butyloxycarbonyl)piperazin-2-one, [3+2] cycloadditions with alkynes and alkenes to give Δ^4-isoxazolines and isoxazolidines, 7339, 7343
bicyclomycin, biosynthesis, incorporation of leucine and isoleucine, hydroxylation and bridge formation mechanisms in piperazinedione intermediate, 6935, corrig. 7329

Piperidines
3- and 4-acetamido-3- and 4-alkyl –, synth by Ritter reactions from the corresponding hydroxy-amines, 1297
1-aroyl-2-methylenepiperidines, irradiation of, synth of benzo[*b*]quinolizin-6-ones, 7749
2,5-dialkoxy–, 3-alkoxy–, formation by rearrangement of 5-bromomethyl-1-pyrrolinium salts, 3171
1,5-dideoxy-1,5-(alkyl)imino-2-*C*-methyl-D-glucitols, deoxynojirimycin analogues, synth as α-glycosidase inhibitors and antiviral agents, 1355
4,5-dihydroxyperhydronicotinic acid, branched imino-sugar, synth and enzyme-inhibitor activity, 2707
(1′*S*,2*R*,3*R*,4*R*,5*S*)-2-(1′-hydroxy-2′-propenyl)-piperidine-3,4,5-triol (deoxynojirimycin analogue), synth from castanospermine as inhibitor of glycosidases, 8573
hydroxylated – by intramolecular reaction of γ-aminoallylstannane with aldehyde, 2109
trans-3-hydroxypipecolic acid, synth of both enantiomers, 2031
hydroxypiperidines and hydroxypyrrolidines, synth by cyclisation of γ-oxygenated-α,β-unsaturated sulfones, 3379
introduction of di(methoxycarbonyl)methyl group into γ-position of piperidine skeleton, 5715, corrig. 8063
2-iodomethyl polybenzyloxylated –, synth and application to aza-*C*-disaccharide synth, 1991
isomerization of polyhydroxy pyrrolidines and piperidines, 1609
micropeptin 90, a cyclic depsipeptide containing a 3-amino-6-hydroxy-2-piperidone unit, isolation from the cyanobacterium *Microcystis aeruginosa* (NIES-90), structure, 9225
nostocyclin, 3-amino-6-hydroxy-2-piperidone-containing cyclic peptide from hepatoxic strain of cyanobacterium *Nostoc* sp., structure and biological activity, 6725
peptidyl argininals, general synth, 4109
photochemical synth of tetramethylpiperidinyloxy capped initiators for "living" free radical polymerization, 4919
pinidine, *cis*-6-methyl-2-(prop-1-enyl) –, synth of both enantiomers, 4987
piperidine analogues of L-rhamnose as inhibitors of naringinase (L-rhamnosidase), synth, 8561, 8565, 8569
poly(*N*-acryloylmorpholine) as a soluble support for the liquid-phase synth of oligonucleotides, 4761
spiro– synth by radical cyclization of *N*-(tetrahydropyridinomethyl)-*o*-bromo-anilines, -phenols, -thiophenols, 5233
α-substituted, β-hydroxy piperidines and pyrrolidines, prep by use of epoxides generated from cyclic ene carbamates as effective *N*-acyl iminium ion precursors, 3255
2,3,4-substituted piperidines, eleboration of using diene iron tricarbonyl complexes, synth of (±)-

dienomycin C and (±)-4-*epi*-dienomycin C, 3991
synth of chiral 2-alkyl– from 1-(2-hydroxy-1-phenylethyl)-2-piperidones, 849
1,3,4,5-tetrahydroxy– derivs, synth by tandem reductive cyclisation of *O*-alkyl oximes, 1547
N-(4-tolyl)piperidine, Vilsmeier formylation of, example of the t-amino effect, 2679
(±)-tubifolidine, (±)-dihydroakuammicine and (±)-akuammicine, *Strychnos* alkaloids, construction of the piperidine ring from 3a-(*o*-nitrophenyl)hexahydroindol-4-ones, 5213

Piperidinones

(2*S*)-4-oxopipecolic acid, synth by rearrangement of a spirocyclopropane isoxazolidine, 4205
α-oxo-β-trimethylstannylmethylpiperidines, synth by radical cyclization and conversion into α,β-methano-heterocycles, 8967
piperidin-3-ones *via* an intramolecular adaptation of the Amadori reaction, 2939
pyrrolidinone- and piperidinone-derived enol triflates, synth and reactivity of, 8257

Plants

Acanthospermum australe Paraguayan plant "Tapecue", structure of acanthostral, an antineoplastic *cis,cis,cis*-germacranolide from, 1455
Annona muricata, isolation of muridienins 1 and 2, biogenetic missing links, 9301
Baccaurea sapida (tropical plant), isolation and structure of sapidolide A, a tetrahydrofuranolactone meroisoprenoid from, 6791
Butea frondosa, medicinal Indian tree, synth of (±)-palasonin, *endo*-3,6-epoxy-1-methylhexahydrophthalic anhydride, anthelmintic, 1129
Cavicularia densa Steph. (liverwort), structure of (+)-cavicularin, an optically active cyclic bibenzyldihydrophenanthrene deriv from –, 4745
Clausena excavata, structures of clausenamine-A and carbazomarin-A isolated from stem and root bark of, 7819
Clusia plukenetii, structure of plukenetione A, 1-benzoyl-2,4,9-trioxo-adamantane deriv from fruit, 8663
Clusia spp. (Guttiferae), terpenoid constituents of floral resins, 6427
Cnidoscolus phyllacanthus (Brazilian plant), synth of (+)-favelanone, a tetracyclic dione originally isolated from, 6797
Colchicum autumnale L., isolation of a microsomal bound cytochrome P-450 NADPH and O_2-dependent enzyme system from – involved in colchicine biosynth, 8161
Cordia corymbosa, synth of (+)-cordiaquinone B, a merosesquiterpenoid quinone with antibacterial activity from root of, 7075
Cratoxylum cochinchinese, orientation of the substituents on the 1,4-dioxane ring of xanthonolignoid 5'-demethoxycadensin isolated from, 2643
Cryptolepis sanguinoleta, isolation of neocryptolepine and biscryptolepine, indolo[3,2-*b*]-quinoline alkaloids, 1703, corrig. 3217
Curculigo capitulata, structure of curcapitoside, a glycosyl-fused phenanthropyran isolated from the rhizome of, 4405
Digitalis lanata, isolation of malonyl-coenzyme A:21-hydroxypregnane 21-hydroxy-malonyltransferase from leaves of, role of enzyme in cardenolide biosynthesis, 2221
Dulacia guianensis (Guyanan tree), construction of the carbon skeleton of manicol, a sesquiterpene constituent of, from (*R*)-perillaldehyde, 525
Eucalyptus globulus Labill., oxidation of 1,8-cineole isolated from –, 1893
Gibberellins GA_{32} and GA_{99} from immature seeds of *Prunus persica* and *Spinacia oleracea* respectively, synth from gibberellic acid, 719, 723
Goniothalamus giganteus, (+)-goniobutenolide A, synth by Pd-catalyzed ene-yne coupling and lactonization cascade, 9041
Goniothalamus giganteus, (-)-goniofupyrone, furano[3,2-*b*]pyran-5-one deriv, synth and absolute configuration, 5389
Goniothalamus giganteus, structures of gigantransenins A-C, acetogenins from the bark of, 5449
Hericium erinaceum, isolation of erinacines E-G, stimulators of nerve growth factor synth, from the mycelia of, 7399
Juniperus phoenicea, structural elucidation of phoeniceroside (2,2-bis-(5-methyl-4-(*O*-β-D-glucopyranosyl)-3(2*H*)-furanone)-propane)isolated from –, 2955
Juniperus thurifera L., structures of sequithuriferol, α- and β-duprezianene, tricyclic sesquiterpenes from the essential oil of wood of, 3757
Lepidolaena taylorii (liverwort), isolation of cytotoxic 8,9-secokaurane diterpenes, 9387
Mylia nuda (liverwort), isolation and structure of nudenoic acid, sesquiterpenoid with tricyclo-[7.2.1.$0^{1,6}$]dodec-7-ene skeleton, 9307
Ornithogalum saundersiae (Liliaceae), cytostatic

activity of cholestane acylglycosides, 1245
Polypodiodes formosana fern, structure of preoleanatetraene, a bicyclic triterpenoid hydrocarbon from rhizomes of, 4381
Salvia apiana, isolation and structure of C_{23} terpenoids with novel apianane skeleton, 4213
Scoparia dulcis Paraguan plant, isolation of scopadulcic acids A and B from: scalemic synth of the acid skeleton by γ-alkylation at C-9 in abietane framework and ring-D formation by aldol and alkylation reactions, 8459, 8463
Sophora davidii, isolation from and structure of davidiol D, the first natural resveratrol pentamer, 5151
Trichilia hirta (Meliaceae), 3-hydroxypregnane-2,16-dione, 2-hydroxyandrosta-1,4-diene-3,16-dione, from wood, 7875
Vitis vinifera (Vitaceae), isolation of a symmetrical bicyclo[6.6.0]tetradecane resveratrol tetramer from stalks of, 4697

Platinum and compds
homogeneous $Pt(COD)Cl_2/PPh_3$ as catalyst for vinylation of aryl iodides, 8917

Podands
2,2′-bithiazolyl-*p*-t-butylcalix[4]arene podands, synth and fluorescence properties, 5889
calix[4]arene – and cryptands carrying nitroxyl spin labels, 8755
conjugated bipyridyl and pyridyl podands, Wittig reactionofmonoformyl-tris-(*p*-Bu^t)calix[4]arene with phosphonium salts of 6-bromomethyl-6′-methyl-2,2′-bipyridine and 2-chloromethylpyridine, 6311
see also Complexation, Host molecules

Polyamines
bis-substituted linear polyamine as a ratiomeric fluorescence probe for the Zn^{2+} ion in aqueous solution, 2193
nephilatoxin 1–6, polyamine toxin from *Nephila clavata*, synth of the 6-hydroxyindole-3-acetic acid subunit of, 7099

Polycyclic aliphatic compds
bishomohexaprismanedione, D_{2h} dimer of norbornadienone and precursor to hexaprismane, synth involving ring contraction of cycloalkene, 3239
enantiopure oxatricyclo[3.3.1.$0^{4,6}$]nonanes, synth and selective opening of an activated cyclopropane ring, 9187
methyl5-hydroxytricyclo[5.2.1.$0^{2,6}$]deca-3,8-diene-2-carboxylate, Cope rearrangement in synth of functionalized hydrindanedicarboxylic acid, 2335, corrig. 7665
8-methylenetricyclo[3.3.0.$0^{3,7}$]octan-2-ol, 9-methylenetricyclo[4.3.0.$0^{3,8}$]nonan-2-one, $(Me_3Si)_3Si\cdot$ mediated cleavage to diquinane and hydrindane systems, 7867
4-substituted pentacyclo[4.3.0.$0^{2,4}$.$0^{3,8}$.$0^{5,7}$]-nonan-9-ones, fragmentation to furnish functionalised tricyclo[3.2.1.$0^{2,7}$]octene derivs, 2655
tricyclo[6.3.1.$0^{1,6}$] and tricyclo[7.2.1.$0^{1,6}$] dodecanes, component of diterpene systems, synth, 8429
tricyclo[5.2.1.$0^{2,6}$]dec-8-ene derivs, diols, enols, enones in (±)- and chiral forms, 205
tricyclo[5.3.1.$0^{3,8}$]undecane system, from methyl carvone and methyl acrylate, 8061
see also Adamantanes, Cage molecules, Cubanes

Polycyclic aromatic compds
benzo[*c*]phenanthrene, thermolysis yields cyclopenta[*cd*]pyrene and benzo[*ghi*]fluoranthene, conversion of an alternant $C_{18}H_{12}$ PAH into a non-alternant $C_{18}H_{10}$ PAH, 1121
(+)-cavicularin, optically active cyclic bibenzyldihydrophenanthrene deriv from the liverwort *Cavicularia densa* Steph., structure, 4745
chrysene, formation of a triepoxide with dimethyl dioxirane, structure, 8671
corannulene, synth from 7,10-diacetylfluoranthene *via* the bis-dimethylsilyloxyvinyl ether, 3437
decacyclene (diacenaphtho[*j,l*]fluoranthene), hexa- and tri-t-butyl-, synth, $Cr(CO)_3$ complexes, and x-ray crystal structure of former, 8371
14c,14d-dihydro-14c,14d-dimethyldibenzo[*e,l*]-pyrene, synth and reversible photo-isomerisation to a tetrabenzo[*ab,d,fg,i*][10]annulene, 5239
(±)-*trans*-10,11-dihydroxy-5,6,6a,7,8,12b-hexahydrobenzo[*a*]phenanthridine (dihydrexidine), dopamine D_1 agonist, synth from the acid chloride of *N*-tosyl-2′-phenethylglycine, 6971
9,10-disubstituted triptycene-1,4-quinone derivs, photochemical rearrangements of, 2121
3-hydroxyfluoranthene-2-carboxylic acid, short synth from fluorenone involving Rh-catalyzed Wolff rearrangement, 8277
10-(methoxyimino)phenanthren-9-one, reaction with benzoylmethylene(triphenyl)phosphorane, synth of 1-methoxy-1*H*-phenanthro[9,10-*c*][1,2]-oxazine, 1097
molrac spacer and platform systems which incorporate the 1,4-benzoquinone chromophore, cycloaddition approach, 2157, 2161
[7]phenacenes (naphtho[1,2-*c*]picenes), synth,

7173
phenanthrene-9,10-dicarboxylic anhydride and 2,2-dimethyl-5-(9′-fluorenylidene)-1,3-dioxan-4,6-dione, flash vacuum pyrolysis of, formation of a phenanthrene and a biphenylene, 6819
polyene containing an α,β-unsaturated electrophore, oxidative cyclisation of, introduction of an angular C-8 cyano group into polycyclic systems, 1751
3,7β,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene, metabolite of benzo[*a*]pyrene, synth, 1527
triphenylene, stereocontrolled synth of *syn*- and *anti*- 3,4-epoxy-1,2-diols, 8267
see also Calixarenes, Fullerenes, and the individual ring systems
Polycyclic heterocyclic compds
10b-alkylated 1,2,4a,5,6,10b-hexahydrobenzo[*f*]quinolin-3(4*H*)-ones, synth from 2-tetralones, 4121
2-azi-camphane, sterically congested diazirine, synth from camphor, 6647
benz[*a*]- and dibenz[*a,f*]-indolizines and benzo[*b*]quinolizines, synth by intramolecular Heck reactions of *N*-(*o*-iodobenzoyl)-2-pyridones, 793
benzo[*a*]quinolizinium salts, synth by 1,1-dimethyl allene insertion into C-Pd bonds, 7263
carbazole cyclic dimer or carbazole main-chain polymer, synth by Knoevenagel condensation of 3,6-diformyl-9-heptylcarbazole and 1,4-bis-(cyanoacetoxymethyl)benzene using 3,6-diformyl-9-heptylcarbazole, 5909
carbazoles, synth from cyclohexadiene-$Mo(CO)_2$ cpd$^+$ PF_6^- and anilines, 7947
clausenamine-A, binary carbazole alkaloid and carbazomarin-A, a carbazole-pyranocoumarin dimer, isolation from stem and root bark of *Clausena excavata*, structures, 7819
cyclopenta[2,3]pyrrolo[1′,2′:1,2]azepino[4,5-*b*]-indole system, synth, 5701, corrig. 8823
dendritic structures of 1,10-phenanthroline ligands with branched groups at 3,8-positions, 8293
1,3-dihydro-2*H*-imidazo[4,5-*b*]quinolin-2-ones, synth by photo-assisted annulation, 1937
1,9-dihydro-4*H*-pyrido[3,2-*b*]indol-4-ones and pyrimido[1,2-*a*]indol-1(4*H*)-ones, synth, 4931
2,3-dihydro-6*H*-pyrimido[2,1-*b*]quinazolin-4(1*H*)-ones, synth *via* carbodiimide intermediates, 9071
2,4-dihydropyrrolo[3,4-*b*]indoles, Diels-Alder and retro-Diels-Alder reactions resulting in transfer of the C1-N2-C3 unit, 3487, corrig. 6959
4,10-dioxatricyclo[5.2.1.$0^{2,6}$]dec-8-en-3-amines, masked imines and iminium ions, addition of Grignard reagents, 8729
fenanthroviridone, gilvocarcin BE-12406X_2 and antibiotic WS 5995B, benzo[*b*]phenanthridines from *Streptomyces*, synth based on coupling of organostannanes with bromoquinones, 8953
furostifoline, furo[3,2-*a*]carbazole alkaloid, total synth from 4-aminobenzofuran using a convergent iron-mediated construction of the carbazole nucleus, 9183
indolizino[1,2-*b*]quinolin-4-ones by intramolecular cycloadditions of *N*-arylimidates, and 3,1-benzoxazin-4-ones, 5679, 5683
indolo[2,3-*a*]quinolizine derivs by cyclization of *N*-(indol-3-ylethyl)-2,3-dihydropyridin-4-ones, 2753
lycorines, alkaloids isolated from *Amaryllidaceae* sp., synth based on intramolecular cycloaddition of an azadiene and an aryne, 405
3,7-methano-2,3,6,7-tetrahydro-1*H*-[1,4]diazonino[1,2-*a*]indol-1-ones, formation by cyclization of dihydropyrid-4-ylacetylindoles, 7653
N_b-methyl-1,2,3,4-tetrahydro-β-carbolines, synth by Pictet-Spengler reaction of abrine alkaloid with aldehydes, 5971
10,11-[1,4-naphthalenedione]dipyrido[3,2-*a*;2′,3′-*c*]phenazine, an acceptor polypyridine ligand, synth by condensation of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, 5437
octahydro-1*H*-pyrrolo[2,3-*d*]carbazole derivs, synth by tetrathiafulvalene radical/polar crossover reaction, 2511, corrig. 5027
2-oxaadamantane, synth from 2-methyl-2-hydroxyadamantane, 5673
perhydro-furo- and -pyrrolo[4,3,2-*cd*]1,2-benzisoxazoles, diastereoselective intramolecular cycloaddition of nitrones to olefins, 841
perhydrocyclopropa[*a*]pyrrolizin-2-ones by metal-catalyzed α-diazo-amide cyclization, 6523
phenanthridines, formation by cyclization of radicals from pyrolysis of fluorenone phenylhydrazones, 2399
1,10-phenanthrolines, synth of 2,9-diaryl derivs by Suzuki and Stille cross-coupling, ligands forcing tetrahedral coordination, 267
pyranosylated indolocarbazole, stereoselective ring contraction of, production of the K252a carbohydrate moiety, biosynthetic link between K252a and staurosporine, 3929
pyrido-cyclohepta-indoles, synth of the tetracyclic

ring system of silicine-methuenine alkaloids, 3541
pyrido[3,2-*g*]quinoline-2,5,10(1*H*)-triones (anthrazolinone quinones), synth by Diels-Alder method, 6955
pyrrolo[2,3-*a*]indoles, 1,2,3,3a- and 2,3,3a,8-tetrahydro, synth of flustramine C, marine alkaloid, 7525
pyrrolo[3,2,1-*jk*][1]benzazepine core of tuberostemonines, synth, 739
1*H*,6*H*-pyrrolo[1′,2′:4,5][1,3,4]oxadiazino[2,3-*a*]isoquinolines, 2,3,7,11b,13,13a-hexahydro-, Lewis-acid promoted cleavage of C(11b)-O bond and nucleophile addition, 6161
pyrrolo[3′,4′:4,5]oxocino[2,3-*b*:6,7,8-*c′d′*]diindole-6,8-dione system, synth of arcyroxocin A, slime mould alkaloid, 4483
1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldioxy arene systems, stereo- and regioselective ether-ring opening of with boron tribromide, 3651
1,2,3,4-tetrahydro-β-carboline derivs, synth by Pictet-Spengler reaction of tryptophan linked to a Kaiser oxime resin with aldehydes, 3963
tetrahydro-β-carbolines from Pictet-Spengler reactions with tryptophan on Merrifield resin, 3963, 5041, 5631
tetrahydro-β-carbolines from Pictet-Spengler reactions with tryptophan on Wang polystyrene, 5631
tetrahydro-β-carbolines, use of 4-arylmethyleneoxazol-5-ones (azlactones) as arylacetaldehyde equivalents in Pictet-Spengler synth, stereochemistry, 5813
tetrahydro-5,6,8b-triazaacenaphthylene derivs, tricyclic guanidines, synth, 905
thianthrene cation radical, reaction with alcohols, isolation and chemistry of 5-cyclohexyloxythianthreniumyl perchlorate, 1749
tremulane, asymmetric synth of the tremulane skeleton by tandem cyclopropanation/Cope rearrangement, 3967
tricyclo[5.2.1.$0^{4,8}$]decane by sequential addition of nucleophiles to tricarbonyl(η^4-cycloheptadienyl)iron tetrafluoroborate, 7361
trifluoromethyl pyrrolo[2,1-*b*]quinazolin-1-ones by co-condensation of 2-aminobenzylamine with methyl trifluoropyruvate and aliphatic or alicyclic ketones, 6939
Tröger's base analogues with dicarboxy functionality, synth, 5791

Polyenes

acyclic tetra-enyl β-keto ester, synth and radical polycyclization to form D-homosteroid skeleton, 7909
alisamycin, a manumycin antibiotic amino–epoxycyclohexenone with polyene side chains, synth, 6619
(4*Z*)-1,2,4,6-heptatetraenes, synth by boron methodology and isomerization to 5-methylene-1,3-cyclohexadienes, 4087
highly branched isoprenoid polyenes from the diatom *Haslea ostrearia*, characterisation, 4755
macrolactin A, 24-membered polyene macrolide from deep sea bacterium, synth of the C11-C24 segment from *rac*-(methyl 6-oxo-2,4-hexadienoate)Fe(CO)$_3$, 9169
macrolactin A, synth of precursor by sequential couplings of vinyl groups, 3501
oligo(2,7-biphenylenylene-(*E*)-vinylene)s, synth from dimethyl(biphenylene-2,7-dicarboxylate), spectral behaviour and electrochemical properties, 5913
polyene containing an α,β-unsaturated electrophore, oxidative cyclisation of, introduction of an angular C-8 cyano group into polycyclic systems, 1751
polyene cyclisation promoted by the cross conjugated α-carbalkoxy enone system, 8073

Polyethers

hemibrevetoxin B, neurotoxin from *Gymnodium breve*, synth based on double rearrangement-ring expansion of a 6,6-membered ether to a 7,7-membered ether and cyclisation of a hydroxystyryl epoxide, 6365
isodehydrothyrsiferol and 10-epidehydrothyrsiferol, polyether squalene derivs from red alga *Laurencia viridis*, structures, 2671
yessotoxin, a polyether compd implicated in diarrhetic shellfish poisoning, absolute configuration by NMR with a chiral anisotropic reagent, 7087

Polyketides

15-*epi*-annonin I, Annonaceous acetogenins, synth *via* Sharpless epoxidation, 7001
bafilomycin A$_1$, antibiotic inhibitor of vacuolar H$^+$-ATPase, synth of C5-C11, C12-C17 and C18-C25 segments and total synth by convergent route, 1069, 1073
1,1-bis(3,5-dimethylfur-2-yl)ethane, Diels-Alder reaction with diethyl 4-oxohepta-2,5-dienedioate, approach to polypropionate fragments, 4149
chlorocarolides A and B, chloro– from cultured

fungus *Aspergillus ochraceus* collected from marine sponge, 2331
iterative asymmetric aldol reactions on solid support, generation of – "libraries", 6851
organocuprate addition to $\alpha\beta$-unsaturated esters, influence of γ-ether substituents, synth of polypropionate and related motifs, 7473
preswinholide A, macrolide constituent, stereoselective synth, 6881, 6885
reveromycin A, polyketide-type antibiotic produced by *Streptomyces* sp., synth of the 6,6-spiroketal system of and absolute configuration at C_{11},C_{12},C_{15}, C_{18} and C_{19}, 6755
14,15-secocurvularin, C_{16} – from sponge *Spirastrella vagabunda*, 8973
synthesis of stereoisomeric "stereotriad" elements for polypropionate-derived skeletons using enzyme catalyzed acetylation, 2773
tetronasin, biosynthesis, synth and incorporation of di-, tri-, and tetra-ketide precursors, 3511, 3515, 3519
tridachiapyrone,4a,5-dihydrochromonepolypropionate from mollusc, 4259
zaragozic acid, synth of bicyclic core *via* epoxide cyclization, 8803

Polymer support

acryloyl polystyrene resin for solid-phase synth of tertiary amines, 3209
amino acid attachment to hydroxymethyl polystyrene using a carbamate linker, use in solid phase synth of hydantoins, 937
9-aminoxanthen-3-yloxymethyl polystyrene, use in synth of resin-bound 1-aminophosphinic acids, 1647
anchored electrophiles and nucleophiles for scavenging and purification in construction of non-peptide mixtures, 7193
anion exchange resins for synth of mixtures of aryl and heteroaryl ethers, 5257
aryl amines, synth by Pd-catalyzed coupling from aryl bromides and amines, D-labelling study of reduction by-products, 7181
balanol, PKC-active fungal metabolite, solid-phase synth of analogues, 8439
biaryls *via* Suzuki cross-coupling of polymer-bound arylsilanes, 2703
cleavage from polymer support (PEG) to form aliphatic C-H bonds, 6491
construction of an amino alcohol library by parallel synth based on Mannich-type three-component reactions of aldehydes, amines and polymer-supported silyl enol ethers followed by cleavage from the supports, 7783
1,3-diarylindazole synth on –, use of single-bead FT IR spectra to monitor reaction, 8325
effect of scavengers in acidolytic cleavage of Cys(Acm)-containing peptides, isolation of ethanedithiol disulfide adduct, 4117
fluorine NMR to monitor synthetic reactions in solid gel phase, 7649
formation of ether derivs of phenolic containing structures using solid phase Mitsunobu chemistry on functionalised polyethylene pins, 3019
guanidinium based tweezer receptor with two tripetide chains, synth on –, 5409
hydantoin-4-imides, synth on Wang resin using Ugi's method, 7489
hydrophobic peptides dodecaalanine and chemotactic protein 10, solid phase synth using solubilizing tail strategy, 8431
hydroxamic acids, synth on Wang resin *via O*-bound hydroxylamine, 8045
2-hydroxy-4-methoxybenzyl group, attachment to *N*-terminus of aminoacid on – by reductive alkylation using aldehyde/$NaCNBH_3$, 9097
indole synth on – by intramolecular Heck reaction, 7189
1-isocyanocyclohexene in – four-component condensations, involvement of münchnone (mesoionic oxazol-5-one) intermediate, 1149
iterative asymmetric aldol reactions on –, generation of polyketide "libraries", 6851
maleimide-assisted on-resin peptide macrocyclization, 5665
miconazole analogs, synth via iodoetherification on Merrifield resin, 5687
modified Wang resin for solid-phase synth of amino-amides, 3213
oligodeoxynucleoside phosphorodithioates, chemoselective coupling on solid phase using PyNOP and PyFNOP, 8041
oxazolidin-2-one bonded from chiral position 4 to resin *via* -$CH_2OCH_2C_6H_4$- link, use in synth of (*S*)-2-methylhydrocinnamic acid, 8023
peptide synth using PyAOP coupling, use of trityl group for *N*-protection 4195
phosphorylcholine affinity columns, convenient reduction using ammonium formate/Pd-C, 7821
Pictet-Spengler reactions with tryptophan on Wang polystyrene, 5631
polyethylene glycol/polystyrene copolymer for solid-phase synth of oligosaccharides, 5007
polyethyleneglycol-bound peptides, photo-triggered selective C-terminal *N*-methylamid-

ative cleavage of, 6421
polymer bound münchnones, 1,3-dipolar cycloaddition of alkynes to–, synth of tetra- and penta-substituted pyrroles, 2943
polymer-bound aromatic bromides, amination with primary and secondary alkyl- and arylamines, synth of arylamine products after cleavage from the support, 6993
polymer-bound benzylic phosphonium salts as 'traceless supports' in synth of olefins, indoles, and methyl aromatics, 7595
polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst in enantioselective epoxidation of unfunctionalised olefins, 3375
polymer-supported silyl enol ethers, $Sc(OTf)_3$ catalysed aldol reactions of, prep of 1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, 5569
polymer-supported synth of oligosaccharides, use of dibutylboron triflate to promote glycosylations with glycosyl trichloroacetimidates, 6985
poly(*N*-acryloylmorpholine) as a soluble support for the liquid-phase synth of oligonucleotides, 4761
quinoline synth from *o*-nitrobenzaldehydes and methyl aryl ketones on solid phase, 2757
racemization studies of Fmoc-Cys(Trt)-OH during stepwise Fmoc-solid phase peptide synth, 1187
Rink resin for synth of oligo-ureas with polypeptide like structures, 5305
side-chain anchoring and cyclization in synth of cyclic peptides, 4229
silyl enol ethers on –, synth and reaction with imines, 2809
solid-phase synth of 6-oxo-2,3,4,6,7,7a-hexahydro-1*H*-2-pyrindine-3-carboxylic acids by intramolecular Pauson-Khand reactions, 3433
solid-phase synth of 1,4-benzodiazepine-2,5-diones using supported amino acids and *o*-nitrobenzoic acids or protected anthranilic acids, 8081
sulfonamides as anchor in resin-bound synthesis, 1145
synth of aldehydes and ketones using *N*-methoxyamides on Rink polymer, 1161
synth of 5,6-dihydropyrimidine-2,4-diones, 5277
synth of *N*-pent-4-enoyl oligonucleotides and thiophosphoryl and phosphoramidoyl oligonucleotides on – by H-phosphonate method, 1539
tricyclic homodetic peptide, synth employing – using coordinated orthogonal protection, 5637
Ugi four-component condensation for synth of imidazoles on Wang resin, 751
universal allyl linker for polynucleotide solid-phase synth, 3789
Wang resin carrying imidazoles, 835

Polymer supported reactions
1-isocyanocyclohexene in – four-component condensations, involvement of münchnone (mesoionic oxazol-5-one) intermediate, 1149
racemization studies of Fmoc-Cys(Trt)-OH during stepwise Fmoc-solid phase peptide synth, 1187
sulfonamides as anchor in resin-bound synthesis, 1145
synth of aldehydes and ketones using *N*-methoxyamides on Rink polymer, 1161

Polymerisation
photochemical synth of TEMPO capped initiators for "living" free radical –, 4919
synth of (*R*)-(+)-7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid as precursor to substrates for the ring-opening metathesis polymerisation, 8853
of unsymmetrically substituted 2,4-diyne alcohols, 5023

Polymers
carbazole main-chain polymer, synth by Knoevenagel condensation of 3,6-diformyl-9-heptylcarbazoleand1,4-bis(cyanoacetoxymethyl)benzene using 3,6-diformyl-9-heptylcarbazole, 5909
cellulose, synth of a homologous series of cellulose analogues (3-*O*-benzyl-2,6-di-*O*-pivaloyl derivs and 2,3,6-tri-*O*-acetyl derivs) by β-glycosylation and deprotection, 9215
cotelomers derived from *N*-[tris(hydroxymethyl)methylacrylamide] and *N*-(acryloylaminoalkanoyl)cytosine arabinoside, cytotoxic effects as carriers, 9049
film-forming UV-energy-absorbing – enabling covalent attachement of biomolecules for laser-induced uncoupling/desorption, 5669
hydrosilylation of diethynylbenzenes by bisdimethylsilylacetylene, 1579
nonracemic 3- and 4-amino furans bound to polystyrene, Diels-Alder reactions of, comparison to their solution state analogues, 2133
4-phenylethynylpyridine-2,6-dicarboxylate forms highly fluorescent beads when attached to – and complexed with Eu^{3+}, 6483
polyethylene glycol inert crosslinked supports, POEPOP and POEPS, for solid-phase synthesis,

synth of a pentapeptide, 6185
(L)-tartrate-derived optically active dendritic fragments, prep by convergent approach and chiroptical properties of, 5935
water-soluble glycopolymers containing GM_3 saccharide, 3421
Polyols
chiral heptane-1,3,5,7-tetrol deriv, conversion into nystatin A_1 C1-C10 fragment, 2487
cyanoethylation and t-butoxycarbonylethylation under PTC, 1237
hydroxyiodination of acetoxy-cyclohexenes, preparation of tetraacetyl conduritol D, 6579
including an intermediate to (−)-avenaciolide from 3-(disilanylmethyl)-2-silatetrahydrofuran derivs derived from trisilanes, 8887
methylcyclopentane triols and tetrols from hexoses using Grob cleavage and SmI_2 cyclization, 1305
1,3-polyols by reduction of of the aldol products from boron-mediated aldol reactions of β-oxygenated methyl ketones with achiral aldehydes, 8585
3,7β,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene, metabolite of benzo[*a*]pyrene, synth, 1527
see also Carbohydrates, Cyclitols, Inositols
Porphyrins and analogues
acenaphtho−, synth using 3+1 strategy, UV spectra with large red shifts, 4873
bifunctional receptors, calixarene tetracetic acid as cation and Zn-porphyrin as anion receptor, associated by barbituric acid−melamine H-bonding, 9341
bis(2,7-dihydroxy-1-naphthyl) zinc −, recognition of dimethyl aspartate by three-point interaction, 5369
bromovinylporphyrin, reaction with tetracyanoethylene, synth of spirochlorin and allylidenechlorin, 5931
buckminsterfullerene (C_{60}) ball-and-chain molecules containing the porphyrin chromophore, synth, 4797
chiral *meso*-aminoporphyrin derivs, synth, NMR, fluorescence in cells, 7511
chiral *N*-substituted porphyrin free bases having a conformationally locked asymmetric nitrogen atom, catalysts for Michael addition of thiophenols to cycloalkenones, 2585
cobalt(II) porphyrin, catalyst for the oxidation of organic substrates with dioxygen and 2-methyl propanal, 3769
compds in which two porphyrins are joined by a biquinoxalinyl bridge and a quinoxaline Tröger's base, accurate distance models of the primary donor-primary acceptor pair of bacterial photosynthetic reaction centres, 68
covalently-connected azobenzene-porphyrin derivs, synth from the corresponding azobenzene aldehydes using the Lindsey condensation, photochemical properties, 699
cycloaddition reactions of nickel(II) β-vinyl-*meso*-tetraphenylporphyrins with TCNE, 3569
dimeric structures linked through *meso*-*p*-aminophenyl tartramide groups, CD of H_2, Zn and Py complexes, 8633
dimethyldioxirane-Mn(C116)TDMPPCl porphyrin as epoxidizing reagent of uracil derivs, 2647
dioxoruthenium(IV) porphyrins, oxidation and chiral recognition of racemic amino esters by, formation of mixed-ligated imino ester/amino ester Ru(II) complexes, 6701
trans-disubstituted *meso*-tetraethynylporphyrins, synth by coupling acetylenic dipyrromethanes with substituted propynals, 4069
endoperoxide of octaphenyltetraanthraporphyrazine, synth by photooxygenation, 5083
fused with four crown ether rings, 3133
heteroaryl substituted porphyrins for the oxophlorin to oxaporphyrin conversion in heme catabolism, synth of β-aryl and heteroarylpyrroles as precursors to, 3247
− with lateral aromatic branches, atropisomerism and liquid crystal formation, 7641
manganese porphyrins as catalysts for oxidation of isosafrole by sodium hypochlorite, competition between epoxidation and *O*-dealkylation, 1091
meso-tetraphenyl β-(2-benzoquinonyl) −, intramolecular charge transfer, UV, electrochemistry, 8437
meso-methylporphyrins by reaction of trimethyl-(porphyrinylmethyl) ammonium iodides with triphenylphosphine followed by hydrolysis, 7147
Mn(III) porphyrin complexes as catalysts for oxidation of natural compds such as 1,8-cineole, 1893
β-nitro-tetrakis(*meso*-pentafluorophenyl) porphyrinato-Cu(I) derivs, synth, UV, cyclic voltammetry, 261
non-planar *meso*-tetraphenyl porphyrins with progressive ethyl substitution on pyrrole rings, UV, crystal structures, 1183
novel − arrays directly linked through the *meso* carbons, UV, fluorescence, 8399

perhalogenated metalloporphyrins, oxidation of substituted 2-methylpyrroles with, synth of dipyrromethanes, 603
phenyl-linked unsymmetrical dimers containing 8,12-diethyl-2,3,7,12,13,17,18-hexamethylporphyrin and *meso*-tetraphenylporphyrin, synth and prep of their metal complexes, 2637
sulfonated polyhaloferroporphyrin with hypochlorite for oxidation of clarithromycin A NMe_2 group, 787
D_2-symmetric 5,10,15,20-tetraarylporphyrins, synth by condensation of C_2-symmetric substituted benzaldehydes with achiral aryldipyrromethanes, 6291
meso-tetraaryl analogues with one thiophene and/or furan ring; also with 2,4-disubstituted pyrrole ring, synth, 197, corrig. 1521
meso-tetra-(4-carboxyphenyl)porphyrin Na salt, 1:2 complex with permethylated β-cyclodextrin in water, NMR, UV, fluorescence, 8019
tetrakis-*meso*-(2,3,5,6-tetrafluoro-4-X-phenyl)-2-Y– (X = F or NMe_2, Y = H or NO_2), synth, UV, NMR, and electrochemical data, 5421
meso-tetraphenyl- and octaalkylporphyrins, *meso*-alkylation and reduction of, synth of the corresponding 5-*H*-phlorins, 7699
tetraphenyl– singly and doubly strapped with tripyrrane units, synth, spectra, complexation, 6469
tripodaphyrins, *meso*-triphenyl– attached through diphenylacetylene residues to a central tetrahedral C atom, synth, UV, fluorescence, 3825
tropiporphyrin, a cycloheptatrienyl porphyrin analogue, synth by condensation of 1,6-cycloheptatrienedicarboxaldehyde with a tripyrrane dicarboxylic acid followed by neutralisation and oxidation, 8825
type I –, synth *via* monopyrrole tetramerization, copro– I and etio– I, 7177
see also Chlorins and derivs, Purpurins

Pressure, reactions under
Diels-Alder reaction of 1,1-bis(3,5-dimethylfur-2-yl)ethane, approach to polypropionate fragments, 4149
high pressure condensation of bulky amines with ethyl acetoacetate or 2,4-pentanedione, synth of enaminoketones, 3691
methyl propynoate addition to cyclopentene and cyclohexene, examination of by high pressure kinetics, 1417

Prins reactions
4-allyl-1,3-dioxanes from 1,3-diol synthons, – cyclization and tetrahydropyran synth, 8679
reverse –, fragmentation of the 2,4-dihydroxytetrahydropyran portion of bafilomycins under Mitsunobu conditions, 9001

Prismanes
bishomohexaprismanedione, D_{2h} dimer of norbornadienone and precursor to hexaprismane, synth involving ring contraction of cycloalkene, 3239

Propellanes
activation barrier for the nucleophilic attack of CN^- on [1.1.1]-propellane compared to total strain energy released, 5573
[3.3.1]-propellanone by methanolysis of 2-oxobicyclo[3.3.1]non-1-yl triflate, 8185
[3.3.3]propellanones, synth by bridgehead alkylation in synth of modhepene intermediate, 7295

Prostacyclins
chiral isocarbacyclin analogues by asymmetric carbonyl-ene reaction with alkynylogous and vinylogous glyoxylates catalysed by a binaphthol-derived chiral titanium complex, 8515

Prostaglandins
tandem cyclopropylcarbinyl-oxiranylcarbinyl radical rearrangements in synth of PGB_1 compds, 809

Prostanoids
12-*epi*-$PGF_{2\alpha}$, isoprostane, synth *via* thionocarbonate radical cyclization route, 779
improved synth of (*R*)-(+)-4-t-butyldimethylsilyloxy-2-cyclopenten-1-one, synthetic precursor to –, 3083
isoprostane $IPF_{2\alpha}$-I, synth and detection in urine, 4849
see also Carbacyclins, Prostacyclins, Prostaglandins, Thromboxanes

Protecting groups
alkyl ester deprotection using magnesium methoxide, 455
allyl esters, deprotection of acid using sulfated SnO_2, 237
benzhydryl (diphenylmethyl) ester group, introduction and removal, $A_{AL}2$ mechanism under acid catalysis, 1965
benzylidene and ethylidene acetals as protecting groups in oxidative functionalisation of positions 1, 2, 9 and 10 of 5-*O*-cinnamoyltaxicine I, 9189
bis-TBDPS protected aryl *C*-olivosides, unusual stereochemistry of glycosides when the C3 and C4 hydroxyls are protected by an extremely

bulky group, 663
Boc (t-butoxycarbonyl) protecting group, removal from nitrogen atoms in conjugation with an aromatic or carbonyl group, 1471
t-butoxycarbonyl – removal using catalytic $Ce(NH_4)_2(NO_3)_6$ (CAN), 2035
t-butyldimethylsilyloxymethyl group, protecting group for adenine, 7833
1:1 and 1:2 complexes of TBAF and $BF_3.Et_2O$ as reagents for removal of trialkylsilyl groups from silyl ethers, 509
4-cyano-2-butenyl group as a protecting group in oligonucleotide synth *via* the phosphoramidite approach, 6643
N-cyclohexyloxycarbonyl group an indole-N – for tryptophan, 7529
Dde and 2-chlorotrityl chloride resin as selective and orthogonal primary amine protecting groups, use in solid phase synth of protected symmetrical polyamines, 2626
debenzylation of complex oligosaccharides using ferric chloride, 5477
demethylation using BBr_3, need for tartrate in workup, 2699
N,N'-dialkylphosphorodiamide – for Fmoc synth of phosphotyrosine-containing peptides, 4953
dialkynes with orthogonal protection by $SiMe_3$ and $GeMe_3$ groups, application to 1,2-diethynyl benzene and ethylene, 2,5-diethynylpyridine, disaccharides, 7959
vic-dihalides (olefin protection), metallic samarium for reductive halogenation, 9313
effect of amino protecting group in synth of higher α-chlorovinyl and α-bromovinyl amino acids from *N*-trifluoroacetyl α-vinyl amino esters, 4309
ethylene glycol protected 2-exo-carbomethoxy-tricyclo[5.2.1.$0^{2,6}$]deca-3,8-dien-5-one, unexpected Cope rearrangement of, 7827
hexafluoroacetone as protecting and activating agent in conversion of thiomalic acid to DL-isocysteine, 8159
o-(1-hydroxyalkyl)-*p*-(phenylsulfinyl)phenols, protection of both OH groups by dimethylsilylenedioxy ether formation before acetoxy-desulfinylation under Pummerer-type conditions, 7545
2-hydroxy-4-methoxybenzyl group, attachment to *N*-terminus of aminoacid on polymer support by reductive alkylation using aldehyde/$NaCNBH_3$, 9097
isobutyl esters for protection of sulfonyl groups in synth of sulfomethyl nucleoside analogues, 4443
4-methoxy- and 3,4-dimethoxy-benzyl ethers, deprotection using $FeCl_3$ with catalytic DDQ, 1645
methoxymethyl esters, solvolysis of penicillin derivs in aqueous methanol, 2761
methoxymethylation of 3-hydroxy-5-phenylisoxazole, selective formation of *N*- or *O*-substituted products, synth of 3-hydroxy-5-phenylisoxazole-4-carbaldehyde, 6857
3-methylpent-3-yl esters, β-carboxy- protection of *N*-Fmoc aspartic acid, 4243
methylthiomethyl protection of N-1 of pyrrolo-[2,3-*d*]pyrimidine-2,4-diones, 759
N-acyl alkene and arenesulfonamides, *N*-desulfonylation using Bu_3SnH/AIBN, 1667
p-nitrobenzyloxymethyl as protecting group for the 2'-hydroxyl of ribonucleosides, 981
p-nitrophenyl group for anomeric protection of oligosaccharides, selective oxidative cleavage *via* *p*-acetamidophenyl glycosides, 3343
orthogonal – in synth of a tricyclic peptide, 5637
oxidative deprotection of allyl ethers using DDQ, 6603
pentafluorophenyl esters, protection/activation of amino and thiol acids with simultaneous *N*-protection, 4915
phenolic silyl ethers, mild Pd-catalyzed desilylation, 153
photolabile alkoxy benzoin protecting groups, synth of by Corey-Seebach dithiane addition, 307
phthaloyl protection of amines, selective deprotection using phthalyl amidase, 7469
protection of the mercury of organomercurials by methylation which allows retention of the mercury on reduction, synth of annulated lactones, 5585
reducible protecting groups for boronic acids, 6705
removal of benzhydryl-glycolamide (OBg) group with tetrabutylammonium fluoride, 5191
selective Boc removal in the presence of silyl ethers, 5131
selective enzymic removal of phenylacetamido – from phosphopeptides, 8725
silicon tetrachloride and phenol as N^{α}-t-butoxycarbonyl group deprotecting agent in solid phase peptide synth, 5989
sterically hindered amino acids, *N*-t-Boc protection using t-Boc_2O/Me_4NOH in MeCN, 3441
tetrahydropyranylation and deprotection of

alcohols catalysed by heteropoly acids, 8597
triisopropyl and triisobutyl silyl − for aryl peroxyoxalic acids, 8273
1-[(2-trimethylsilyl)ethoxy]ethyl group as protecting group for hydroxyl groups, synth from an alcohol and 2-(trimethylsilyl)ethyl vinyl ether, 3647
2-(trimethylsilyl)ethyl2-acetamido-2-deoxy-3,4,6-tri-*O*-acetyl-β-D-glucopyranoside, prep from 2-acetamido-2-deoxy-1,3,4,6-tetra-*O*-acetyl-β-D-glucopyranose, 609
trityl group for *N*-protection of aminoacids in solid-phase peptide synth using PyAOP coupling, 4195
trivalent protecting groups for synth of symmetrical and unsymmetrical bis-tetraazamacrocycles, 7711
two new C_9 protecting groups for the anomeric position of carbohydrates, use in synth of analogues of moenomycin, 367
use of acid labile protective groups for carbohydrate moieties in solid phase synth of *O*-linked glycopeptides, 3011

Proteins
de novo designed multimeric proteins, prep using subtiligase and glycolate ester peptide substrates, 6653
bis(iminodiacetic acid)-appended myoglobin, synth by cofactor reconstruction method, 9233
pseudo-symmetrical four-helix-bundle − with four intramolecular disulfide cross links, 201
serine-threonine protein phosphatase substrates, solid-phase synth using bis(polyfluorophenyl)-chlorophosphates, 8227

Protonation
catalytic enantioselective − of Sm(III) enolates using C_2-symmetric chiral diol, 2805

Pummerer reactions
abnormal Pummerer cyclisation of sulfoxides to sulfides, 5217
of*N*-Cbzα-amino-α-trifluoromethyl-β-*p*-tolylsulfinyl methyl butanoates, S_N2-type displacement of the sulfinyl by hydroxy group to yield α-trifluoromethyl-*allo*-threonine derivs, 6005
− cyclization to indole 3-position in synth of geissoschizine, 9105
thietane nucleosides by application of − to thietane sulfoxides, 7569

Purines
acyclic nucleoside phosphonic acids in the purine and pyrimidine series, prep *via* Michael addition, 4701
adenine, use of the t-butyldimethylsilyloxymethyl group as a protecting group, 7833
coupling of organocuprates with 6-chloropurines, synth of 6-(*sec*-, *tert*-alkyl)purines, 1285
imide with 2-naphthoyloxy group as (9-)butyladenine receptor, NMR complexation-induced ^1H shifts, 6109
see also Nucleosides, Nucleotides

Purpurins
ketobacteriopurpurins, synth and UV/vis spectra of novel types, 747

Pyranones
see Pyrones

Pyrans
4-alkylidenetetrahydropyrans, synth by zirconocene-mediated cyclization of allyl but-3-enyl ethers, 9059
6-benzoyl-5,6-dihydro-3,4-dimethyl-2*H*-thiapyran, synth by thermolysis of phenacyl sulfoxide bearing nitrogen-containing heterocycles in the presence of 2,3-dimethyl-1,3-butadiene, 3739
chiral synth of tetrahydropyran-containing C18-C30 core of phorboxazoles using enol borinate aldol methods, 6449
curcapitoside, glycosyl-fused phenanthropyran isolated from the rhizome of *Curculigo capitulata*, structure, 4405
cyclic hydropyran oligolides, synth by macrolactonisation of tris(hydropyran) hydroxy acids or by cyclooligomerisation of bis- or tris(hydropyran) seco acids, 343
[2+2]-cycloaddition of dihydrofuran and dihydropyran to quinones *versus* Lewis acid promoted spiroannulation, 5221
diaminopyrans by oxidative azidonation of glycals using $PhIO/TMSN_3$ reagent combination, 303
5,6-dihydro-2*H*-pyrans, synth by Diels-Alder reaction of dienes with aldehydes, 6351
fragmentation of the 2,4-dihydroxytetrahydropyran portion of bafilomycins under Mitsunobu conditions, 9001
5-hydroxy-3-(3,6-dihydropyran-2-yl) furans and furan-2(5*H*)-ones, synth, 8007
influenza virus sialidase inhibitor GG167, 5,6-dihydro-4*H*-pyran-2-carboxylic acid deriv, synth of analogues, 6595
preswinholide A, macrolide constituent with dihydro and tetrahydro pyran rings, synth, 6881, 6885
6*H*-pyran-3-carboxylates, reaction with arsonium ylids, formation of vinylcyclopropane and dihydrofuran derivs, 9349

spiropyrans by photoirradiation of MeOH/C_6H_6 solution of 3-cycloalkenyloxy chromone, 8913
α-stannyl dihydropyrans, synth from tungsten dihydropyranylidene carbenes by reaction with tributyltin triflate and triethylamine, 4675
styryl tetrahydropyrans, synth by radical addition to styryl sulfimides, 909
tetrahydro–, regio- and stereo-selective reductive cleavage of 1,7-dioxaspiro[5.5]undecane alcohols, 5649
tetrahydro–, stereocontrolled synth from 1,3-dioxan-4-ones, 141
tetrahydro–, steroselective synthesis based on ring expansion of tetrahydrofurans, 213
tetrahydro–, synth from 4-allyl-1,3-dioxanes by Prins reactions, 8679
tetrahydropyranylation and deprotection of alcohols catalysed by heteropoly acids, 8597
thromboxane B_2, 4-hydroxy-2-methoxytetrahydropyran deriv, synth, 9321

Pyrazines
N-arylpiperazines by Pd-catalyzed coupling reactions, 4463
arylpiperazines *via* nucleophilic aromatic substitution of (η^6-fluoroarene)tricarbonylchromium complexes, 8487
3-cyclopropylpropanoyl –, photochemistry, a radical clock to probe biradical lifetimes, 8629
deoxyaspergillic acid, naturally occurring secondary metabolite, synth from dipeptidyl aldehyde, 2249
diketopiperazine catalyst containing the amino acid (*S*)-norarginine, solid-phase synth of, 5839
2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-*a*]quinoline, synth from 1-benzylpiperazin-2-one nitrone and 1-phenyl-1-(trimethylsilyloxy)ethylene, 7343
intramolecular Diels-Alder reactions of – with an alkenyl side chain, formation of bridged tricyclic compds which undergo retro-Diels-Alder to yield the original pyrazines, 8205
2-oxopiperazines by intramolecular Michael addition of on solid support, 6247
phenylpiperazines, synth by reaction of aniline derivs with bis(2-bromoethyl)-*N*-(ethoxycarbonyl)amine on an alumina support, 319
polyaza macrocycles containing the piperazine ring as a semi-flexible moiety, synth from (2*R*, 5*R*)-1-t-butoxycarbonyl-2,5-diphenylpipera7111
pyrazine *C*-ribosides, synth by direct metalation, 5325
pyrazino[2,3-*e*][1,4]diazepine derivs, synth from 3-aminopyrazine-2-carboxylic acid and α-amino acid esters *via* intramolecular aza-Wittig reaction, 81
Schöllkopf bislactim ether, stereocontrolled synth of 2-amino-4-phosphonobutanoic acids using, 5801

Pyrazoles
by stepwise cycloaddition of *N*-phenyl hydrazidoyl cyanides to acrylates, 8771
variably substituted pyrazoles, solid supported synth in 4 steps including a Claisen condensation, α-alkylation and a cyclisation of a β-diketone with monosubstituted hydrazines, 1003
withasomnine, pyrazole alkaloid from *Withania somnifera* Dun, synth by rearrangement of 1-(3-chloropropyl)-cyclopropanol into 5,6-dihydro-4*H*-pyrrolo[1,2-*b*]pyrazole followed by bromination and phenylation, 1095

Pyrazolidines/pyrazolidinones
bicyclic pyrazolidinones with antibacterial potential, 4891
pyrazolidine heterocycle construction by generation of azomethine imines by 1,3-dipolar cycloreversion of 1,3,4-oxadiazolidine, 4323

Pyrazolines/pyrazolinones
biotin and fluorescein labelling of biomolecules by active esters of 1-phenylpyrazolin-5-ones, 4313
7,9-pyrazoline adducts from reaction of hydrazine with 10-deacetyl-10-dehydrobaccatin III-type taxanes, 7837

Pyridazines
3-amino– by ANRORC reactions from 3-chloro- and 3-methylthio-1,2,4-triazines with C-nucleophiles, 5795
azapurpurosamine C synth using enzymic asymmetrization of 3,6-di(hydroxymethyl)hexahydro– derivs, 7951
azidopyridazines, reduction to corresponding aminopyridazines using Fe/NH_4Cl in organic solvent-water two-phase solution, 7059
inward-facing 3,6-di-2-pyridylpyridazine rings fused to rigid molecular racks, synth, NMR, 2825
nucleophilic heteroaromatic substitution of halide by alkoxide in –, phthalazines, thiazole and thiadiazoles, amide ions as activating groups, 4065
[6+6]-photocycloadditions in face to face benzo/pyridazino systems, approach to diazapagodanes, 4491
pyridazines and *N*-aminopyrroles by cyclisation of 4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-

diazabutadiene with an electron-rich olefin, 1351
tetrahydropyridazine-3,6-dione synth from anhydrides on microwave heating, regiochemistry, 4145

Pyridines

4-alkyl-3,5-dibromo-, 3-bromo-4,5-dialkyl- and 3,4,5-trialkylpyridines, synth *via* metalation and metal-halogen exchange of 3,5-dibromopyridine, 2565
trans-2-allyl-6-alkyl(aryl)-1,2,3,6-tetrahydro–, synth by RLi, then triallylborane, addition to pyridine, 1317
2-allyloxy– and their Pd(II)-catalyzed rearrangement to *N*-allyl-2-pyridones, 2829
3-amino-2-ethoxycarbonyl imidazo[1,2-*a*]pyridines, synth by reaction of heterocyclic amidines with benzotriazole and ethyl glyoxylate *via* α-benzotriazolyl-α-amidino esters, 1787
benzoyl chloride adducts of pyridine and quinoline *N*-oxides, reaction with carbonitriles, synth of 2-pyridyl- and 2-quinolyl diacylamine *via* a carbene intermediate, 69
bifunctional helicenes with π-deficient pyridine and π-excessive thiophene units, synth using (1*R*,2*S*,3*R*,4*S*)-3-amino-2-hydroxybornane as a chiral auxiliary, 5925
2,2′-bipyridine-5,5′-dicarbaldehyde, synth from 5,5′-dimethyl compd *via* the bisdimethyl enamine, 7503
1*R*,1′*R*-2,6-bis[1-(diphenylphosphino)ethyl]pyridine, use in asymmetric transfer hydrogenation, 797
2-bromo-6-lithiopyridine by lithiation of 2,6-dibromopyridine, application to synth of 5-lipoxygenase inhibitor L-739,010, 2537
conjugated bipyridyl and pyridyl podands, Wittig reaction of monoformyl-tris-(*p*-Bu^t)calix[4]arene with phosphonium salts of 6-bromomethyl-6′-methyl-2,2′-bipyridine and 2-chloromethyl-pyridine, 6311
copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands as catalysts for synth of optically active allylic benzoates from olefins, 2633
2,6-dichloro-3-iodoimidazo[1,2-*a*]pyridine, coupling reaction of with 2,3-dihydrofuran, synth of imidazo[1,2-*a*]pyridine *C*-nucleosides, 6275
5,6-dihydropyridine-2(1*H*)-thiones, synth from *N*-3-oxoalkylamides, 5199
dihydropyridines and pyridines, synth by aza-Wittig reaction of *N*-vinylic phosphazenes with carbonyl compds, 6379
N-(1,4-dihydropyrid-4-ylacetyl)indoles cyclization to 3,7-methano-2,3,6,7-tetrahydro-1*H*-[1,4]diazonino[1,2-*a*]indol-1-ones, 7653
N-diphenylmethylidene (3-pyridylmethyl)amine, lithiation, alkylation, in synth of minor tobacco alkaloids, 1137
2,2′-dithiobis(5-nitropyridine) as reagent for the activation of thiol function of cysteine in peptides and subsequent disulfide formation, 1347
enantioselective reduction of 2-aroyl-pyridines and *N*-allylpyridinium triflates using oxazaborolidine-catalyzed catecholborane, 5675
enantioselective synth of chiral 5-(α-hydroxyisobutyl)pyridine-3-carbamides by asymmetric autocatalytic reaction on addition of diisopropyl zinc to 5-formyl compd, 8783
[*b*]-fused pyridines, synth by cyclisation of cycloalkenylmethyleneoxazolones, 8871
halopyridines, Suzuki coupling with sterically bulky boronic acid, effect of base on acceleration of rate, 1043
hydropyridine synth by oxidative Mannich cyclisation of α-silyl-amines and -amides, 571
importance of pyridine complexation in the Gif oxidation of cyclohexane, 8329
1-(4-iodobutyroyl)-1,4-dihydropyridine-3-carbaldehyde derivs, cyclization under Luche conditions to quinolizidines, 1599
3-mercaptopicolinic acid, inhibitor of gluconeogenesis, synth from 3-bromo-2-cyanopyridine, 3617
10,11-[1,4-naphthalenedione]dipyrido[3,2-*a*;2′,3′-*c*]phenazine, an acceptor polypyridine ligand, synth by condensation of 1,10-phenanthroline-5,6-dione and 1,2-diamino anthraquinone, 5437
4-phenylethynylpyridine-2,6-dicarboxylate, forms highly fluorescent beads when attached to polymer and complexed with Eu^{3+}, 6483
4-(3-phenylpropyl)pyridine *N*-oxide as an additive for the MnLCl/NaOCl catalysed asymmetric epoxidation of indene, 3271
4-phosphonomethyl-1,4-dihydropyridines, synth *via* corresponding 4-chloromethylpyridines, 6033
pyid-2-ylpyruvic acids, decarbonylation of by sodium perborate at room temperature, synth of the corresponding acetic acids, 1901
3-pyridine bismethylcarbamate, Diels-Alder reaction with 1,3-cyclohexadiene, synth of the rigid azabicyclic backbone of 3-(3-pyridyl)-2-azabicyclo[2.2.2]octane, 8841

pyridine hydrochloride, new reagent for the synth of *o*-chloro hydroxy derivs in pyridine and quinoline series, 6695
pyridine *N*-oxide, reaction with benzylic bromides under microwave irradiation, synth of aromatic aldehydes, 7725
4-pyridinemethanamines by aminoalkyl-decyanation of 4-pyridinecarbonitrile with imines, 3009
pyridines and pyrido[2,3-*d*]pyrimidines, solid phase synth suitable for combinatorial libraries, 4643
3-(4-pyridinylamino)-1,2-benzisoxazoles, prep *via* an amidoxime cyclisation, 995
pyrido-fused steroidal D-ring and functionalised pyridine, synth from conjugated oximes under Vilsmeier conditions, 8231
3-radical generation and cyclization to 4-(but-3-ynyl) group, synth of 2-pyrindine skeleton, 8049
sagitol, a pyridoacridine alkaloid from the deep water sponge *Oceanapia sagittaria*, structure, 9147
substituted pyrrolo[2,3-*b*]pyridin-3-ones from 2-amino-3-iodo-pyridine derivs by a palladium heteroannulation process, 43
synth from alkylphosphonates, nitriles, and $\alpha\beta$-unsaturated ketones, 4577
tetrahydropyridines and tetrahydropyridine *N*-oxide, copper-catalysed epoxidation of, 8497
tridentate P,N,P ligands with twofold chiral symmetry from 2,6-di(1-hydroxyethyl)– and 2,6-di(hydroxymethyl)–, 4933
trifluoromethyl-substituted 1,4-dihydro–, synth using $POCl_3$/pyridine on silica gel for dehydration, 4177
untenines A-C, nitroalkyl pyridine alkaloids with anti-microfouling activity from the Okinawan sponge *Callyspongia* sp., structures and synth of untenine A, 1813

Pyridinium salts

addition of enolate C at C-4 in synth of geissoschizine, 9105
asymmetric addition of Grignard reagents to chiral 1-acyl–, chiral auxiliary study, 3807
dioctylviologen as an electron transfer catalyst in reduction of azobenzenes and azoxybenzenes to hydrazobenzenes, 6721
dipyridinium symmetrically 1-3′ bridged with oct-5-ene chains, synth in biomimetic approach to manzamine, 6919

Pyridones

N-allyl-2-pyridones, synth by Pd(II)-catalyzed rearrangement of 2-allyloxypyridines, 2829
1-aryl-2,3-dihydro-4-pyridones, synth, 3489
asymmetric conjugate allylation of *N*-(8-arylmenthyloxycarbonyl) 2,3-dihydro-4-pyridones catalyzed by $TiCl_4$, 9063
2,3-dihydropyridin-4-ones, synth by hetero-Diels-Alder reaction, 2753
intramolecular Heck reactions of *N*-(*o*-iodobenzoyl)-2-pyridones, synth of benz[*a*]- and dibenz[*a,f*]-indolizines and benzo[*b*]quinolizines, 793
4-methoxy-2-pyridone, [4+4] photocycloaddition to other 2-pyridones, but not to itself, 1141
6-oxo-1,6-dihydropyridine-3-carboxylates, formation from 4-silyloxy-1,3-oxazin-6-ones by reaction with acetylenic esters and enamines, 4973, 4977
4,6-substituted 1-acyl-5,6-dihydro-2-pyridones, synth from 2-substituted 1-acyl-2,3-dihydro-4-pyridones, 9275

Pyrimidines/pyrimidinones

acyclic nucleoside phosphonic acids in the purine and pyrimidine series, prep *via* Michael addition, 4701
2-amino-1,5-dihydro-4*H*-pyrrolo[3,2-*d*]-pyrimidin-4-one (9-deazaguanine), synth from ethyl-(ethoxymethylene)cyanoacetate and diethyl aminomalonate, 4339
10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido-[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione, inclusion complex with urea and ethanol, 8905
3,4-dihydro-2*H*-pyrido[1,2-*a*]pyrimidines, synth by reaction of 2-aminopyridines with formaldehyde and alkenes, 2615, 2619
4,5-dihydropyrrolo[2,3-*d*]pyrimidine and 4,5,6,7,8-pentahydropyrrolizino[2,3-*d*]pyrimidine analogues, synth from 6-tertiary amino radicals, 1853
molecular sheets of 1,2-bis(2′-tetrahydropyrimidyl)ethane and dihydrogenopyrophosphate ribbons interconnected through $H_2P_2O_7^{2-}$ anions by hydrogen bonds, synth, 1405
pyridines and pyrido[2,3-*d*]pyrimidines, solid phase synth suitable for combinatorial libraries, 4643
pyrrolo[3,2-*d*]pyrimidines (9-deazaguanines), synth by reductive cyclodeamination of 5-nitro-6-cyanomethylpyrimidine derivs, 5829
solid-phase synth of 5,6-dihydropyrimidine-2,4-diones, 5277
see also Nucleosides, Nucleotides, Uracils

Pyrindines

2,3-dihydro-3-methylene- and -3-oxo-1-oxy-cyclopenta[*c*]pyridines, synth by radical cyclization,

8049
(-)-4a,5-dihydrostreptazolin, *N*-carboxy-7-hydroxyperhydro-1-pyrindine lactone deriv, synth by Pd-catalyzed reductive enyne cyclization, 8787
solid-phase synth of 6-oxo-2,3,4,6,7,7a-hexahydro-1*H*-2-pyrindine-3-carboxylic acids by intramolecular Pauson-Khand reaction, 3433

Pyrolysis
of 7,10-bis(dimethylsilyloxyvinyl)fluoranthene and a dimethylbenzo[*k*]-fused homologue, corannulene synthesis, 3437
flash vacuum pyrolysis of 2-acylisoxazol-5-ones, conversion to the corresponding 2-substituted oxazoles, 675
flash vacuum pyrolysis of phenanthrene-9,10-dicarboxylic anhydride and 2,2-dimethyl-5-(9′-fluorenylidene)-1,3-dioxan-4,6-dione, formation of a phenanthrene and a biphenylene, 6819
fluorenone phenylhydrazone –, cyclization of radicals forming phenanthridines, 2399
thermolysis of benzo[*c*]phenanthrene yields cyclopenta[*cd*]pyrene and benzo[*ghi*]fluoranthene, conversion of an alternant $C_{18}H_{12}$ PAH into a non-alternant $C_{18}H_{10}$ PAH, 1121

Pyrones
aminopyranones, synth by chemo-, regio- and stereoselective transformation of substituted tosylpyrrolidinones using tetra-*n*-butylammonium fluoride, 8173
6-aryl-3-methoxy-carbonyl-4-methylthio-2*H*-pyran-2-one, carbanion induced ring transformation of to 4′-methoxycarbonyl-5′-methylthio-1′,3′-terphenyls and methyl(4,6-diarylpyran-2-ylidene)acetate, 93
auripyrones A and B, cytotoxic polypropionates from the sea hare *Dolabella auricularia*, structures, 5151
intramolecular [2+2] photocycloaddition of 6-alkenyl-2,3-dihydro-4-pyrones and rearrangement of the products, 1663
lagunapyrones A-C, cytotoxic acetogenins from unidentified marine sediment bacterium, structures, 1327
phenoxan, HIV-1 inhibitor from *Poliangium spec.* PL VO19, synth from ethyl 2-methylacetoacetate, 2997
pironetin (PA-48153C), 5,6-dihydropyran-2-one deriv, synth, 6615
(+)-pyripyropene, acyl-CoA:cholesterol transferase inhibitor with 2-pyrone unit, biomimetic synth, 6461
2-substituted 4-pyrones, synth from acyl Meldrum's acid and enol ethers, 6499
synth of (+)- and (-)-dihydrokawain, 5,6-dihydro-2-pyrones, 6503

Pyrroles
acetylenic dipyrromethanes, coupling with substituted propynals, synth of *trans*-disubstituted *meso*-tetraethynylporphyrins, 4069
achiral aryldipyrromethanes, condensation reaction with C_2-symmetric substituted benzaldehydes, synth of D_2-symmetric 5,10,15,20-tetraarylporphyrins, 6291
3-alkyl-1-(phenylsulfonyl)pyrroles, reversible Friedel-Crafts reactions, synth of 2,3- and 2,5-disubstituted pyrroles, 1523
2-amino-1,5-dihydro-4*H*-pyrrolo[3,2-*d*]-pyrimidin-4-one (9-deazaguanine), synth from ethyl-(ethoxymethylene)cyanoacetate and diethyl aminomalonate, 4339
N-aminopyrroles and pyridazines by cyclisation of 4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-diazabutadiene with an electron-rich olefin, 1351
annulated[*b*]pyrroles, synth by thermal rearrangement of *N*-alkyl-*N*-vinylpropargylamines, 6709
β-aryl and heteroarylpyrroles by palladium-catalysed coupling reaction of β-tributylstannylpyrrole with aryl and heteroaryl halides, 3247
4-aryl-2,3-dihydropyrroles, synth by a combination of Heck arylation of *N*-allylsulfonamide and subsequent hydroformylation, 3947
bicyclic ketopyrroles, synth from δ-(sulfonylamino)-α-epoxy ketones *via* intramolecular conjugate-addition to azoene intermediates, synth of bicyclic core of the 1-azafulvene roseophilin, 2545
1-t-butoxycarbonyl-2-(t-butyldimethylsilyloxy)-pyrrole, coupling with 1-t-butoxycarbonyl-2-methoxypyrrolidines, 7963
t-butyl 3,5-dimethoxypyrrole-2-carboxylate and a bipyrrolic oxidative coupling product from dye-sensitised photooxidation of t-butyl 3-methoxypyrrole-2-carboxylate, 6657
2-carboxy-3,4-disubstituted – and porphobilinogen, synth from β-acetoxy-nitroalkane and benzyl isocyanoacetate, 2325
a decahydrohexapyrrin, synth of model PBG-deaminase-bound intermediate to uroporphyrinogen III, 763
2,4- and 2,5-diaroyl – in synth of tripyrrin derivs and porphyrin analogs, 197, corrig. 1521
4,5-dihydropyrrolo[2,3-*d*]pyrimidine and 4,5,6,7,8-pentahydropyrrolizino[2,3-*d*]pyrimidine anal-

ogues, synth from 6-tertiary amino radicals, 1853
7,9-di(2-pyrrolylmethyl)acenaphtho[1,2-*c*]pyrroles, synth, incorporation into porphyrin system, 4873
dipyrromethenone synth for C,D rings of phytochrome and phytochromobilin, 6069
fischerellin A, perhydro-3-(pyrrol-2-ylidene)-pyrrole-2,4-dione with alkenediyne tail from cyanobacterium, isolation and structure, 6539
functionalised pyrrolo[2,1-*a*]isoquinolones, intermediates to *Erythrina* alkaloids, synth by sequential addition of organolithium reagents and *N*-acyliminium ion cyclisation of *N*-phenethylsuccinimide, 7841
[*c*]-fused crown ether –, synth and conversion into porphyrins, 3133
(-)-2-(methoxy-1-phenylethyl)-2-t-butyldimethylsilyloxy–, addition at C-5 of aldehydes and $\alpha\beta$-unsaturated carbonyl compds, stereochemistry, 1213
4-methyl-2-phenyl–, synth, 5755
monopyrrole tetramerization, synth of coproporphyrin I and etioporphyrin I, 7177
polysubstituted pyrroles and 4,5,6,7-tetrahydroindoles, synth by oxidation of hydroxy-enamines and -amines, 9203
pseudoceratidine and analogues, 4,5-dibromopyrrole-2-carboxylic amides, synth, biological activity, 6041
pseudoceratidine, antifouling spermidine deriv with two 4,5-dibromopyrrole-2-carbamyl units from marine sponge *Pseudoceratina purpurea*, structure, 1439
pyrrole α-methyl methyl ethers by oxidation of pyrrole α-methyl groups with ceric triflate in methanol, 315
pyrrole-2-carbaldehydes, conversion into pyrrolo-[1,2-*c*]pyrimidines using TOSMIC, 4263
pyrrolo[2,1-*c*][1,4]benzodiazepine antibiotics, synth by reductive cyclisation of the azide employing hexamethyldisilathiane, 6803
pyrrolo[3,2-*d*]pyrimidines (9-deazaguanines), synth by reductive cyclodeamination of 5-nitro-6-cyanomethylpyrimidine derivs, 5829
2- and 3-pyrrylaldehydes and 3-pyrrylketones, low-valent Ti reduction, formation of olefins, coupled dipyrrylethanes, and other products, 2721
substituted 2-methylpyrroles, oxidation with perhalogenated metalloporphyrins, synth of dipyrromethanes, 603
3-substituted –, synth from acetonitriles, synth of precursor to danaidone, 4099
substituted pyrroles by reaction of acetylene derived azatitanacyclopentene complexes with carbon monoxide, 7787
substituted pyrrolo[2,3-*b*]pyridin-3-ones from 2-amino-3-iodo-pyridine derivs by a palladium heteroannulation process, 43
synth of 2-(benzotriazol-1-ylmethyl) – and conversion into indoles, 5641
synth of a 4-hydroxymethyl-2,5-di(5-formyl-2-pyrrolyl)-pyrrole-3-carboxylic lactone, 6089
tetra- and penta-substituted pyrroles *via* a 1,3-dipolar cycloaddition of alkynes to polymer bound münchnones, 2943
tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), isolation from *Latrunculia* South African sponge, 7135
unsymmetrical dipyrrolyl sulfides bearing electron-withdrawing groups at the α-position, prep, 2891

Pyrrolidines/pyrrolidinones

3-acetamido-3-alkyl –, synth by Ritter reactions from the corresp. hydroxy-amines, 1297
1-aroyl-2-methylenepyrrolidines, irradiation of, synth of enaminoketones, 7749
3-arylprolines, synth using reductive cyclization of azido-olefins to form pyrrolidine ring, 4091
1-azaspiro[4.4]non-6-ene synth by Pd-catalysed spirocyclization in approach to cephalotaxine, 5253
1-benzenesulfonyl-3,4-methano-3-vinylpyrrolidines, synth using allenyl-Pd(II) starter species in bis-cyclization-anion capture processes, 4609
N-(chloromethyloxycarbonyl)pyrrolidine as a source of the $HOCH_2^-$ synthon, 5593
coupling of 1-t-butoxycarbonyl-2-methoxypyrrolidines with 2-(trimethylsilyloxy)furan and 1-t-butoxycarbonyl-2-(t-butyldimethylsilyloxy)pyrrole, 7963
cyclodidemnamide, 21-membered cyclopeptide containing 2-(pyrrolidin-2-yl)-2-thiazoline component, synth, 9111
2,5-dialkyl-substituted pyrrolidine derivs, synth by reaction of C_{60} with alkylaldehydes in the presence of aqueous ammonia, 4031
diazoacetamides of 2-substituted-pyrrolidines, rhodium-catalysed carbon-hydrogen insertion of, synth of (1*S*,8*S*)-1-hydroxypyrrolizidin-3-one and (–)-heliotridane, pyrrolizidine bases, 1371

(3*S*,4*S*)-3,4-dihydroxy-3-hydroxymethylpyrrolidine, synth of a ribofuranosyl cation mimic, 2097
dye-bound pyrrolidine with two macrocyclic side arms at positions 3 and 4, sequence-selective receptors for peptides, 8699
enantiomerically pure pyrrolidinones as endothelin receptor antagonists, synth by [2+2] cycloaddition of an imine and an acid chloride followed by rearrangement of the resulting β-lactams, 4627
homochiral synth by cleavage of perhydropyrrolo[1,2-*a*]imidazoles, manipulation of substituents at C-2 and C-4, 1711
3-(4-hydroxybutyl)-3-methylpyrrolidin-2-one, diazomalonate ester, intramolecular addition of carbenoid to amide carbonyl O, formation of 10-membered bicyclic imino-ether, 8035
3-hydroxy-2-hydroxymethyl-4-nitropyrrolidines, enantiodivergent synth by sequential Michael and Henry reactions starting with *N*-benzyl L-serine methyl ester or serinol deriv, 7599
hydroxylated − by intramolecular reaction of γ-aminoallylstannane with aldehyde, 2109
α-hydroxypyrrolidine, reduction of as key step in synth of (−)-codonopsine antibiotic alkaloid, 5531
hydroxypyrrolidines and hydroxypiperidines, synth by cyclisation of γ-oxygenated-α,β-unsaturated sulfones, 3379
isomerization of polyhydroxy pyrrolidines and piperidines, 1609
kainoid synth, stereocontrol, 6923
3-methyl pyrrolidine, synth by radical cyclization on a chiral perhydro-1,3-benzoxazine template, 9085
(*S*)-4-methylpyrrolidin-2-one, synth by reduction of (*R*)-phenylglycinol derived oxazoline, 3993
1-*p*-nitrobenzenesulfonyl-2-phenylpyrrolidines, synth by Hofmann-Löffler-Freytag type reaction, 6129
α-oxo-β-trimethylstannylmethyl pyrroles, synth by radical cyclization and conversion into α,β-methano-heterocycles and kainoid analogues, 8967, 8971
palladium-catalyzed couplings of a *N*-tosylpyrrolidinone-derived enol tosylate, 3561
proline analogues, solid-phase synth *via* a three component 1,3-dipolar cycloaddition, 3671
pyrrolidines by condensation of resin bound 3-hydroxyacetophenone with aryl aldehydes followed by reaction with azomethine ylid, 9157
pyrrolidines, synth from glycine Schiff bases by cycloadditions with crotonate and 4-bromocrotonate, 2857, corrig. 5027
pyrrolidinone- and piperidinone-derived enol triflates, synth and reactivity of, 8257
spiro-fused pyrrolidinones by generation of azomethine ylids, imidate methylids and thioimidate methylids in the presence of electron deficient dipolarophiles, 5163
α-substituted, β-hydroxy piperidines and pyrrolidines, prep by use of epoxides generated from cyclic ene carbamates as effective *N*-acyl iminium ion precursors, 3255
substituted tosylpyrrolidinones, chemo-, regio- and stereoselective transformation to aminopyranones using tetra-*n*-butylammonium fluoride, 8173
L-(+)-swainsonine and dihydroxy-L-swainsonines, synth as inhibitors of naringinase (L-rhamnosidase), 8561, 8565, 8569
synth of pyrrolidin-2-ylidene malonate esters involving Reformatsky-type reaction between bromomalonate and a thiopyrrolidone, synth of tricyclic analogues of quinolone antibacterials, 9403
N-(4-tolyl)pyrrolidine, -piperidine and -perhydroazepine, Vilsmeier formylation of, examples of the t-amino effect, 2679
1-tosyl-3,4-disubstituted − by radical addition/cyclization of PhSeTs to *N,N*-diallyl tosylamides, 1229
2-trifluoromethyl pyrrolidines, synth by cycloaddition of trifluoromethyl azomethine ylids with olefins, 5515
N-urethane protected-3,5-dialkyl-3-amino pyrrolidine-2,4-diones from urethane *N*-carboxyanhydrides in the presence of a base, 1027
Wacker aminocarbonylation of unsaturated amides, synth of 2-pyrrolidineacetic esters, 7287

Pyrrolines/pyrrolinones

2-aryl-3-pyrrolines, synth by [3+2] cycloaddition route, 5755
azomethine ylid Sm(III) complexes, cycloaddition to αβ-unsaturated esters, synth of 1-pyrrolines, 6573
5-benzylidene-3-methyl-3-pyrrolin-2-ones, (*E*)- and (*Z*)- forms, stereoselective synth, 5809
5-bromomethyl-1-pyrrolinium salts, rearrangements to piperidine derivatives, 3171
chiral synth of 5-substituted 3-pyrrolin-2-ones *via* 1-substituted 2-t-butyldimethylsilyloxypyrroles, 1213

conjugate addition of C nucleophiles to chiral pyrrol-3-en-2-ones, 4573
palladium-catalyzed couplings of a *N*-tosylpyrrolidinone-derived enol tosylate, 3561
N-substituted pyrrolin-2-ones, synth by treatment of 1-benzyloxycarbonyl-4-hydroxy-5-methylpyrrolidin-2-one with di-t-dicarbonate in the presence of 4-dimethylaminopyridine, 291

Pyrrolizines/pyrrolizidines
(±)-heliotridane and (6*S*,7*S*)-dihydroxyheliotridane, synth by radical cyclization, 5825
(1*S*,8*S*)-1-hydroxypyrrolizidin-3-one and (−)-heliotridane, pyrrolizidine bases, synth from diazoacetamides of 2-substituted-pyrrolidines by rhodium-catalysed carbon-hydrogen insertion, 1371
2-trifluoromethyl pyrrolizidines, synth by cycloaddition of trifluoromethyl azomethine ylids with olefins, 5515

Pyrylium ions
triarylpyrylium salt promoted substitution reactions of dimethyl acetals with silylated nucleophiles, 7779

Quassinoids
highly oxygenated −, synth of (±)-14β,15β-dihydroxyklaineanone, 2699

Quinanes
angular triquinane system, synth by trapping of an *O*-stannylketyl radical, generated by cyclopropyl ketone fision, by alkene group, 1177
azatriquinane, azatriquinacene, synth from pyrrole and dimerisation by *N*-oxidation, 131
diquinane construction by radical cyclization of phenyl octa-2,7-dienselenoate, 271
diquinanes by $(Me_3Si)_3Si\cdot$ mediated cleavage of 4-methylenetricyclo[3.3.0.0^{3,7}]octan-6-one, 7867
(±)-pentalenene, triquinane sesquiterpenoid isolated from *Streptomyces griseochromogene*, synth *via* an intramolecular Diels-Alder reaction of trisubstituted cyclopentadiene, 89
triquinanes, linear and angular, synth by zincaene-allene reactions, 857

Quinazolines
azeto[2,1-*b*]quinazolines, synth by intramolecular [2+2] cycloaddition of ketenimines with imines, 8945
barbituric acid-5-spiro-4-quinazoline system, synth, 3849
chiral 3-substituted quinazoline-2,4-diones, solid phase synth starting from *N*-urethane anthranilamides, 7031
chloro−, Pd-catalyzed alkyl-dechlorinations using trialkylalanes as alkyl source, 1309
3,4-dihydroquinazoline-4-acetic esters, synth, 209
N,N-dimethyl-2-(quinazolin-4-on-3-yl)benzamide, formation under Vilsmeier conditions, 5015
pyrazino-, [1,2,5]thiadiazolo- and [1,2,5]selenadiazolo-fused −, formation from nitro-heterocycles and ethyl isocyanoacetate using DBU as base, 8391
synth of pyrrolo-fused trifluoromethyl 1,2,3,4-tetrahydro− by co-condensation of 2-aminobenzylamine with methyl trifluoropyruvate and aliphatic or alicyclic ketones, 6939

Quinazolinones
chiral 3-acetoxyamino-3,4-dihydroquinazolin-4-ones for aziridination of alkenes, 5179
1,3-dialkylquinazoline-2,4-diones, synth on solid support, 4439

Quinolines
benzoyl chloride adducts of pyridine and quinoline *N*-oxides, reaction with carbonitriles, synth of 2-pyridyl- and 2-quinolyl diacylamine *via* a carbene intermediate, 69
10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido-[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione, inclusion complex with urea and ethanol, 8905
o-chloro hydroxy derivs in pyridine and quinoline series, synth using pyridine hydrochloride, 6695
2-chloro−, Pd-mediated substitution, alkynylation, vinylation, arylation, methoxycarbonylation, 8281
ciprofloxacin and norfloxacin, quinolone antibiotics, synth by reaction of 7-chloro-1-cyclopropyl-6-fluoro-4-oxo-1,2-dihydroquinoline-3-carboxylic acid with piperazine, 6785
6,7-dimethoxy-4-methyl-5-nitroquinoline, conversion into 6-chloro-1,3,4,5-tetrahydro-7,8-dimethoxy-1-methylpyrrolo[4,3,2-*de*]quinoline and 1*H*-3,4-dihydro-7-methoxy-pyrrolo[4,3,2-*de*]-quinolin-8-one, 1509
ethiodides of 1-ethyl-3-(2'-quinolyl)-1,4-dihydroquinoline and 3-methyl-5,6-benzoindazolino-[1,2-*c*]quinoline from *N*-ethylquinolinium iodide, 4801
2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-*a*]quinoline, synth from 1-benzylpiperazin-2-one nitrone and 1-phenyl-1-(trimethylsilyloxy)ethylene, 7343
10*H*-indeno[1,2-*g*]quinoline derivs, synth by Diels-Alder reactions of enyne allenes, 999
quinolines and methanes, synth by base-mediated reactions of *ortho*- and *para*-perfluoroalkyl-

anilines, 4655
quinolones, solid phase approach to using the DIVERSOMER® technology, 4815
quinolono-*o*-quinodimethanes, synth from quinoline-fused 3-sulfolenes and subsequent Diels-Alder reactions of, synth of linearly fused and bridged multicyclic heterocycles, 7823
1-sulfonyltetrahydroquinolines, cyclization of sulfonamides to aromatic rings using diacetoxyiodobenzenes, I_2 and light, 6129
synth from *o*-nitrobenzaldehydes and methyl aryl ketones on solid phase, 2757

Quinolinones
6,7-dichloro-1- and 3- (2,3,5-tri-*O*-benzoyl-β-D-ribofuranosyl)imidazo[4,5-*b*]quinolin-2-one by ribosylation of 6,7-dichloroimidazo[4,5-*b*]-quinolin-2-one, 3263
levofloxacin, – antibacterial, synth of (*S*)-7,8-difluoro-3-methyl-2*H*-1,4-benzoxazine, key intermediate, 9317
penigequinolones A, B, dihydro– from *Penicillium* sp., 4961
tricyclic analogues of – antibacterials, synth by Reformatsky-type reaction between bromomalonate and a thiopyrrolidone, followed by pyridone ring cyclization, 9403

Quinolizines/quinolizidines
benzo[*b*]quinolizin-6-ones by irradiation of 1-aroyl-2-methylenepiperidines, 7749
3,4-didehydro-2-methyl-6-oxoquinolizidine-1-carbaldehyde, synth from 1,4-dihydropyridine deriv, 1599
homopumiliotoxin alkaloids, quinolizidine based diene alkaloids, synth of the core unit by reductive cyclisation of a 1,1-dibromoalkene to an acetylene, 7151
indolo[2,3-*a*]quinolizine system, route to involving cross-coupling of a 2-indolylzinc deriv with 2-halopyridine, hydrogenation of the pyridine ring and cyclisation on indole 3-position, 3071
methyl 3α-ethyl-1,2,3,4,6,7,12bβ-octahydroindolo[2,3-*a*]quinolizine-1α-carboxylate, intermediate to tacamine-type indole alkaloids, synth from methyl 5-(1′-hydroxyethyl)nicotinate, 1513

Quinolizinium ions
clathryimine, 3-phenyl-6,7,8,9-tetrahydroquinolizinium-4-carboxylate zwitterion, from sponge *Clathria basilana*, 2389

Quinones
2-alkyl quinone monoketal, annulation of heterocyclic rings onto–, potential for alkaloid synth, 2881
angucyclinone synth by Mn(III) cycloaddition of benzylmalonic ester to 1,4-naphthoquinones, 7615
anthracene-1,2,5,8-tetrone, double Diels-Alder approach to [8]cyclacene belt, 1983
anthraquinone cyclophanes, synth as precursors to [8]cyclacene derivs, 1989
aphid pigment derivs, metal-mediated diastereoselective synth through use of metal phenolates derived from naphthol, 7851
benzoquinone bonded to TTF by double bridge, synth and cyclic voltammetry, 2503
benzoquinone fused to C_{60} by two CH_2 bridges, anion radicals and dianion diradical, ESR, electrochemistry, x-ray structure, 7987
ortho-benzoquinones, formation by tyrosinase action on phenols, trapping in Diels-Alder reactions, 3833
by cycloaddition of dihydrofuran and dihydropyran *versus* Lewis acid promoted spiroannulation, 5221
by oxidation of hydroquinones with acyl nitrates or trimethylsilyl nitrates, 5029
2,6-dialkyl-3,7,8-trihydroxydibenzofuran-1,4-dione, central ring system of popolophuanone E, synth, 5719
2,3-dimethylindole-5,6-quinone, generation, NMR, 4241
dipuupehedione, cytotoxic dimeric sesterterpene from sponge, 3861
9,10-disubstituted triptycene-1,4-quinone derivs, photochemical rearrangements of, 2121
fredericamycin A, quinone antitumour antibiotic from *Streptomyces griseus*, synth of BCD and BCDE ring systems of by acylation of the organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, 1367
imino-iodonium zwitterions from 2-amino-1,4-naphthoquinone and ArI(III) compds, 913
2-methyl-1,4-naphthoquinone, functionalisation of saturated hydrocarbons in Gif-type systems using –, 1755
molrac spacer and platform systems which incorporate the 1,4-benzoquinone chromophore, cycloaddition approach, 2157, 2161
1,4-naphthoquinones by homogeneous oxidation of naphthalenes by peracetic acid catalyzed by iron and manganese phthalocyanines, 1637
1,4-naphthoquinones, cycloaddition to styrenes promoted by Me_2AlCl or $MeAlCl_2$, cyclobutanaphthalenedione products, synth of 6,11-dimethoxy-5-phenylnaphthacene-1,4-quinone, 9397

oxidative deprotection of allyl ethers using DDQ, 6603
pyrido[3,2-*g*]quinoline-2,5,10(1*H*)-triones (anthrazolinone quinones), synth by Diels-Alder method, 6955
Sch 68631, phenanthraquinone antibiotic from *Streptomyces* sp., hepatitis C proteinase inhibitor, 7229
steroidal quinols and *syn*-epoxyquinols by *m*-CPBA oxidation of phenols, 3765
tsitsikammamine A and B together with 14-bromodiscorhabdin C and 14-bromodihydrodiscorhabdin C (pyrroloiminoquinone alkaloids), isolation from *Latrunculia* South African sponge, 7135
ubiquinone biosynth, synth and enzymatic modification of biogenetic precursors, 2395

Quinonoid compds

benzo[*c*]tellurophene *o*-quinonoid heterocycle, synth from 1,3-dihydrobenzo[*c*]tellurophene diiodide, 9149
N-t-butyloxycarbonyl-3-*p*-toluenesulfinylbenzoquinone-4-imine, synth and Diels-Alder reactivity, 3187
2,3-bis(chloromethyl)-1,4-naphthoquinone, reaction with 2-nitropropane anion by consecutive $S_{RN}1$ reactions leading to the bis-*C*-alkylation product, 3323
4,5-dimethyleneisothiazoles, generation from isothiazole-fused sulfolene, trapping, 4189
quinolono-*o*-quinodimethanes, synth from quinoline-fused 3-sulfolenes and subsequent Diels-Alder reactions of, synth of linearly fused and bridged multicyclic heterocycles, 7823
1,4-quinonediimines *N,N'*-bis(4-amino/dimethylamino-phenyl)-, convenient synth, 731
α-trimethylsiloxy-*o*-quinodimethanes, synth by reaction of *o*-tributylstannylmethyl benzaldehyde with zinc in the presence of TMSCl and 2,6-lutidine, 8891

Quinoxalines

1-benzyl-3,3-dialkyl-2-phenyl-1,2,3,4-tetrahydroquinoxalines, synth by rearrangement of 2,2-dialkyl-1,3-dibenzyl-2,3-dihydrobenzimidazoles, 3355
substituent and conformation effects in 6,7-dinitroquinoxalinedione, evidence from N-14 and O-17 NMR, 3191

Racemisation

catalytic – of alcohols, application to enzymatic kinetic resolution, 7623
– studies of Fmoc-Cys(Trt)-OH during stepwise Fmoc-solid phase peptide synth, 1187

Radicals and radical reactions

photolysis of a Diels-Alder adduct obtained from reaction of furan with cyclopropene, synth of 3-oxatetracyclo[3.3.0.$0^{2,8}$.$0^{4,6}$]octane, 1385
radical cyclisation of η^6-arene-$Cr(CO)_3$ complexes, synth of mono-demethoxylated hydrophenalene-$Cr(CO)_3$ derivs which are precursors for the synth of antiinflammatory pseudopterosins, 2947
3-acryloyl-4,4,7-trimethyl-2-(phenylselenomethyl)perhydro-1,3-benzoxazine, cyclization to fused pyrrolidinone, 9085
acyclic tetra-enyl β-keto ester, synth and radical polycyclization to form D-homosteroid skeleton, 7909
addition of alkyl radicals to maleic anhydride and subsequent attack by nucleophilic aromatics, novel homolytic aromatic substitutions, 7425
addition of PhSeTs to *N,N*-diallyl tosylamides and cyclization, synth of 3,4-disubstituted *N*-tosylpyrrolidines, 1229
– addition to styryl sulfimides, synth of styryl tetrahydrofurans and tetrahydropyrans, 909
addition of $TolSO_2SePh$ to enynyl sulfones, synth of 1,4-di(arenesulfonyl)-1,3-butadiene, 4161
allylstannylation of alkynes to give β-allyl-substituted vinylstannanes *via* a radical process, 8539
angucyclinone synth by Mn(III) cycloaddition of benzylmalonic ester to 1,4-naphthoquinones, 7615
arene-alkene photocycloaddition-radical cyclisation cascade sequence for synth of *cis,cis,cis, trans*-[5.5.5.5]-fenestranes from toluic acid derivs, 7687
aryl alkyl sulfoxides, radical carboxyallylations, stereochemistry, 8387
C-arylation of a gibberellin on attempted radical deoxygenation, 4255
2-aryl-3-oxophenalen-1-oxyl radicals, generation, ESR, dimerization, 873
asymmetric benzylic hydroxylation using catalytic Mn(III)-salen complexes and PhIO or C_6F_5IO, 4979
benzoquinone and 1,4-dimethoxybenzene fused to C_{60} by two CH_2 bridges, anion radicals and dianion diradical, ESR, electrochemistry, 7987
bicyclo[1.1.1]pent-1-yl, tertiary alkyl radical with enhanced reactivity, photogeneration from corresponding diacyl peroxide, 8059

1,4-biradical intermediates in intramolecular photocycloaddition of cyclopropene carboxylic acid allylic esters, formation of 5-oxaspiro-[2,4]hept-4-ones, 8879
α-boryl radicals, intermolecular additions to olefins, allylation by allyl stannanes, synth of homoallylic boronate esters, 6847
5-(bromoalkyl)-5*H*-dibenzo[*a,d*]cycloheptenes, Bu_3SnH/AIBN cyclization/reduction, preference for radical 6-membered ring formation over 5-membered, 3845
t-butoxycarbonyl deprotection using catalytic $Ce(NH_4)_2(NO_3)_6$ (CAN), 2027
carboxylation of saturated hydrocarbons in Gif systems, 1555
cation radical deazetation of 2,3-diazabicyclo-[2.2.2]oct-2-enes, phenyl substitution effects on rate acceleration of, 4377
Cl replacement by alkyl, alkenyl, dioxanyl, benzyl, ... in trichloroethylene, trichloro-1,3,5-triazine, dichloromaleic anhydride, chloranil, hexachlorobutadiene, by chain processes, 6897
cleavage of hexuronic and penturonic acids by $PhI(OAc)_2/I_2$, synth of alduronic acid lactones, 1687
coupling of alkyl iodides with αβ-unsaturated esters using Ni_2B-borohydride exchange resin in MeOH, 3137
cyclic alkoxylation of aromatic ring using $PhI(OAc)_2/I_2$, 2441
8-*endo*- cyclisation of (alkoxycarbonyl)methyl radicals, synth of (−)-clavukerin A and (−)-11-hydroxyguaiene from (+)-limonene oxide, 5929
cyclization with aromatization to anilines of 2,4,5-hexanenitriles on heating in cumene, 839
cyclization of hexose-derived aldehydo-olefins using SmI_2, formation of methylcyclopentane triols and tetrols, 1305
5-*exo*-cyclization of iodo-alkenes with oxygenation, synth of 3-hydroxymethyltetrahydrofurans, 3117
cyclization of olefinic fluorine-substituted hex-5-enyl radicals, kinetics, 5321
cyclization of sulfonamides to aromatic rings using diacetoxyiodobenzenes, I_2 and light, formation of 1-sulfonyltetrahydroquinolines, 6129
cycloaddition of phenylcyclopentadienes to α-thioacrylonitriles, concerted reaction with radicaloid transition state favoured, 2417
cyclopropanation of olefins by diarylcarbene cation radicals, 4927
dehydroxyation of (+)-brazilin to (+)-brazilane, 2421
denitration of sec. nitro compounds, direct (Bu_3SnH) or indirect (*via* amine and isocyanide) in sorgolactone synth, 3491
N-desulfonylation of *N*-acyl alkene and arenesulfonamides using Bu_3SnH/AIBN, 1667
dialkyl phosphonyl and thiophosphonyl radicals, generation of, synth of 2,2-disubstituted-1,1-difluorophosphonates and -phosphonothioates, 2233
diastereoselective triple radical cyclisation of a bromomethyldimethylsilyl allyl ether, construction of the B-ring of taxanes, 6295
4,5-dihydrofuran-3-carbonitriles, 3-hydroxy-1,2-dioxan-4-carbonitriles, synth from alkenes and acylacetonitriles using $Mn(OAc)_3$, 4949
2,3-dihydro-3-methylene- and -3-oxo-1-oxy-cyclopenta[*c*]pyridines, synth by cyclization of 3-pyridinyl radicals, 8049
dihydroxylation of β-bromoethyl benzene, vinyl and aryl radical cyclisations and Friedel-Crafts C_{10}-C_{11} closure, key steps in synth of morphine skeleton, 8155
dimerization and subsequent further reactions of radicals generated from cyclic ethers by Hg-sensitized irradiation, 6853
dimethyldioxirane, activity in adamantane oxidation, effect of $CBrCl_3$ and of air, 249
2,5-dimethyl-6-oxophenalen-1-oxyl radical, generation, ESR, dimerization, 877
diphenazithionin, a novel antioxidant from *Streptomyces griseus*, structure and inhibitory activity of lipid peroxidation, 9227
1,3-diphenylpropenyl radical, laser photolytic generation and UV detection, 4923
1,6-diradical intermediate in photo-fragmentation of 3,3,6,6-tetra(*p*-methoxyphenyl)-1,2-dioxane, 8181
1,4-diradical intermediates formed in the intramolecular [2+2] photocycloaddition of alkene-enones photosubstrates, trapping of, 8941
electron-transfer induced deprotonation of pinenes: ring-closed vinylcyclobutane cation radicals, 2385
enantioselective radical-chain hydrosilylation of alkenes using chiral thiol catalysts, 9123
12-*epi*-$PGF_{2\alpha}$, isoprostane, synth *via* thionocarbonate radical cyclization route, 779
fluorenone phenylhydrazone pyrolysis, cyclization of radicals forming phenanthridines, 2399
free radical addition of t-BuHgI/KI to 1-vinyl-4-pentenyl acrylates, 8-*endo versus* 5-*exo* cyclisa-

tion, 2557
free radical expansion of cyclobutanones with sequential Grob fragmentation for synth of medium and large cyclic ketones, 957
free radical reaction of an α,β-unsaturated ketone and tributyltin radical, synth of a resonance-stabilized allylic *O*-stannyl ketyl intermediate which produced a tin(IV) enolate on atom transfer, 559
bis-galvinoxyl-disulfide, prep from 11-bromoundecanol and characterisation, 8837
halogen transfer addition of methyl 2-bromo-2-chlorocarboxylates to olefins, 2077
(±)-heliotridane and (6*S*,7*S*)-dihydroxyheliotridane by sequential H atom abstraction and cyclization, 5825
β-hydroxy-cobaloximes, use in cationic and radical chemistry to form five- and six-membered rings, 9369
hypersensitive probes in mechanistic studies of Gif oxidations, role of alkoxy radicals, 819, 823
intermolecular radical additions of 2,3-*cis*-disubstituted 1,1-dibromo- and 1-bromocyclopropanes to electron-deficient olefins, 1837
intramolecular 6-exo-dig radical cyclisation approach to (±)-erigerol using SmI_2, 5519, 5523
intramolecular aryl radical cyclisation of enamide, synth of benzothienoindolizidines, 7707
intramolecular aryl radical cyclisation of *o*-bromobenzaldehyde and allyl amine in the presence of tributyltin hydride, synth of fused tricyclic β-lactams, 1363
intramolecular radical cyclisation and Heck reaction of *N*-allylisogramine deriv, synth of 4-substituted-1,2,3,4-tetrahydro-β-carbolines, 2659
intramolecular reductive cyclization of bromomethyldimethylsilyl αβ-unsaturated esters, 8363
isocyanides as source and fate of imidoyl radicals, homolytic α-fragmentation of imines, 9337
α-ketenylalkyl and αβ-unsaturated acyl radical intermediates in ring constructions, 271
$LiAlH_4$ reduction of 2-(isopropylsulfonyl)-bicyclo-[2.2.1]hept-5-ene-2-carbonitrile *via* a radical intermediate, 4717
5-methyl-1-azabicyclo[2.2.1]heptane and 1,5-dimethyl-1-azoniabicyclo[2.2.1]heptane system by sequential cyclization of β-ammonio radicals, 5805
8-methylenetricyclo[3.3.0.$0^{3,7}$]octan-2-ol, 9-methylenetricyclo[4.3.0.$0^{3,8}$]nonan-2-one, $(Me_3Si)_3Si\cdot$ mediated cleavage to diquinane and hydrindane systems, 7867
nitroxyl radicals derived from chiral oxazolidines, 7933
N,S- and N,Se-acetals as precursors for radical reactions, 9199
oxidation of ethers to esters by photo-irradiation with benzil and oxygen, 4179
α-oxo-β-trimethylstannylmethyl pyrroles, piperidines, tetrahydrofurans, synth by − cyclization and conversion into α,β-methano-heterocycles, 8967
phenylcyclopropane cation radical, generation and rates for its nucleophilic capture, 1841
4-phenyl-8-methoxyoct-4-ene-2,6-diyn-1-amine, pyridoxal-mediated cycloaromatization, 5397
photo-addition of 1,3-dithian-2-yl phenylselenide to electron-deficient alkenes, 2743
photochemical synth of TEMPO capped initiators for "living" free radical polymerization, 4919
photolysis of 3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivs, synth of 2-acetylaniline derivs *via* arylnitroxyl radicals, EPR spectroscopy, 2895
photolysis of spiro[2,5]octa-1,4-dien-3-ones, reversible biradical formation and biradical-olefin cycloaddition, 5853
N-phthaloyl iminium ions and amino-substituted radicals derived from threonine, stereoselectivity of the reactions of, 2569
polyhaloalkyl radical anions, solution heterolytic bond dissociation energies of, 1457
propargyl radicals, generation from *S*-propargyl xanthates, 5495
radical additions to olefins in the presence of iodobenzenediacetate, synth of alkyl dithiocyanates, 1889
radical allylation of non-protected β-hydroxy esters after formation of chelated aluminium alkoxides upon treatment with $MeAlR_2$, 6335
radical cyclisation of β-aminoacrylates, synth of indolizidine alkaloids 167B and 209D, 1445
radical cyclisation of *N*-ethenyl trichloroacetamides, synth of β-lactams, formation of γ-lactams when exposed to nickel powder and acetic acid in 2-propanol, 1397
radical cyclisation of phenyl 2-*N*-allylamino-3,4,6-tri-*O*-benzyl-2-deoxy-α-D-1-seleno *galacto* and *gluco* pyranosides, synth of 2-amino-2-deoxy-α-D-C-glycopyranosides, 9193
radical expansion and cyclisation of α-iodomethylcyclopentanones, synth of *cis*-decalins, 6355

radical Grob-type fragmentation of fused cyclobutyl ketones, two-carbon ring expansion of cyclic enones to ring ketones, 6519
radical reactions with thiols, polar substituent and solvent effects on the kinetics of, 5845
radical rearrangement of (+)-ferruginine, tropane alkaloid, route to functionalised 6-azabicyclo[3.2.1]octane system, 2201
radical-based allylation reactions using 2-functionalised allyl tris(trimethylsilyl)silanes, 6383, 6387, 6391
radical-induced S_N1 substitution reactions, 4365
removal of bromide and iodide groups in halobenzoic acids and other substrates by hypophosphorous acid in water, 5367
selective chlorination of glutaric anhydrides at C-3 using $SO_2Cl_2/(PhCO)_2O_2$, 7245
spin trapping by 1,3,3-trimethyl-6-azabicyclo-[3.2.1]oct-6-ene *N*-oxide (trazon), ESR of nitroxide adducts, 5313
6(8)-1′ spiro-bridged nucleosides, 1,5-translocation and closure of radical derived from 6(8)-(dibromovinyl) derivs, 2801
4-spiro-piperidine synth by – cyclization of *N*-(tetrahydropyridinomethyl)-*o*-bromo-anilines, -phenols, -thiophenols, 5233
spongian-16-one, synth by cascade radical process, 4191
stannane mediated vinyl iodide cyclizations, improvement of 5-*exo*/6-*endo* ratio by catalytic Ph_2Se_2, 3105
stereoselective radical additions to alkenes, the Curtin-Hammett principle, 351
substituted oxiranyl radicals generated from glycidic acids, cyclisation of, 6299
tandem [2+2] cycloaddition-cycloreversion reaction with acyl chlorides, synth of substituted alkenes, 7143
tandem bis-alkylation strategy to cyclize the indoline heteroring of indoline 2,2-biscarboxylates from *N*-trifluoroacetamide and diethyl bromomalonate, 6965
tandem cyclopropylcarbinyl-oxiranylcarbinyl – rearrangements in synth of prostaglandin B_1 compds, 809
tandem radical cyclisation of acylsilanes with alkene or alkyne functionalities attached to silicon, synth of cyclic silyl ethers which could be oxidatively hydrolysed to give diols or ketone alcohols, 7767
tetrathiafulvalene radical/polar crossover reaction in synth of derivatives of octahydro-1*H*-pyrrolo[2,3-*d*]carbazole, 2511, corrig. 5027
thermal rearrangement of 7-vinylnorcaradienes *via* a common biradical, 7761
thermolysis of benzyl cobaloximes, formation of 5-arylisoxazoles, 5413
thianthrene cation radical perchlorate for transformation of phenolic Schiff bases to 2-arylbenzoxazoles in the presence of 2,6-di-t-butyl-4-methylpyridine, 8869
thianthrene cation radical, reaction with alcohols, isolation and chemistry of 5-cyclohexyloxythianthreniumyl perchlorate, 1749
thiyl cyclization of *O*-allyl $\alpha\beta$-unsaturated hydroximidates, 229
trapping of an *O*-stannylketyl radical, generated by cyclopropyl ketone fision, by alkene group, synth of angular triquinane system, 1177
treatment of vinylcyclopropanes with CO in the presence of Bu_3SnH and AIBN leading to stannylformylation *via* a cyclopropylcarbinyl radical opening to a homoallylic radical, 6729
vinyl radicals by addition of sulfanyl (sulfenyl) radicals to alkynes, rearrangements and cyclization, a 1,4-radical translocation, 6583

Ramberg-Bäcklund reactions
of dipropargylic sulfones, synth of (*E*)- and (*Z*)-hex-3-ene-1,5-diynes, 1049
modified – in [4.4](1,3)-adamantanophane-*trans, trans*-diene synth, 4829

Rearrangements
13-acetyl-9-deoxy-9-hydroxybaccatin III, acid-catalyzed – to *abeo*-taxanes with 5,7,6 fused system and opened oxetane ring, 6435
acid and base catalysed – of 9,10-dioxotaxanes, generation of wallifoliol from 10-dehydro-10-deacetylbaccatin III, 727
acid-catalysed – of carbinol in prep of (+)-*trans*-camphenesulfonamide from camphorsulfonamide, 3267
acid-catalyzed – of 6,8-dioxabicyclo[3.2.1]octan-2-ol to 2,8-dioxabicyclo[3.2.1]octan-4-ol systems, approach to squalestatin core, 4623
acid-catalyzed – of 1-ethoxy-3-oxabicyclo[3.2.0]-heptanes to cyclopentanones, 2073
acid-catalyzed, tricyclo[6.2.2.$0^{1,6}$]dodecenediol to tricyclo[6.3.1.$0^{1,6}$] and tricyclo[7.2.1.$0^{1,6}$] dodecenones, 8429
of allyl phenyl ethers related to mycophenolic acid, establishment of intramolecularity of unusual rearrangement *via* a crossover experiment, 21
allylic, forming 3-ene-1,5-diynes from 3-benzyli-

dene-4-hydroxy-1,5-diynes, 8413
[3,3] allylic trichloracetimidate rearrangement, synth of α,α-disubstituted α-aminoaldehydes and α-amino acids, 2573
anhydropenicillin – with 6,6-dibromo 2β-chloro/bromo-methyl 2α-methylpenam-3α-carboxylic acids, 4431
Arbuzov –, intramolecular, of dialkyl phenylphosphonites initiated by anodic oxidation, 1625
aza-Cope, – of *N*-allylanilines forming indolines, over zeolites, 5281
aza-[2,3]-Wittig–of 1-propargyl-2-vinylaziridines, formation of tetrahydropyridines and pyrrolines, 2495
4-azido-3-hydroxytetrahydropyran to tetrahydrofuran-3-carbaldehyde, 5645
barriers to Wagner-Meerwein rearrangement of the secondary and tertiary 4-homoadamantyl cations of [3-^{13}C]-3,4-dimethyl-4-homoadamantyl *p*-nitrobenzoate, 1035
base-catalysed – of 12,18-cyclopregnane-11,20-dione, synth of 12(13→18)-*abeo*-pregnane, 929
of 2-benzoyl-3,4-dimethyl-5-phenyl-1,3-oxazolidines to 4,5-dimethyl-3,6-diphenylmorpholin-2-one, 8223
BF_3-induced – of aziridinocyclopropanes derived from 2-phenylsulfonyl-1,3-dienes, synth of the tropane alkaloid skeleton, 3371
bromo-diepoxides, AgOTf-promoted ring expansions to 3-triflyloxy-perhydropyrano[3,2-*b*]-pyrans, 6173
1-bromo/chloro-1-lithio-2-cyclohexyl-2-phenylethene, – with Ph migration, 5269
of α-bromocyclobutanecarboxylate to 1-(hydroxymethyl)cyclopropanecarboxylic acid by reaction with potassium hydroxide or carbonate, 623
5-bromomethyl-1-pyrrolinium salts, – to piperidine derivatives, 3171
catalyzed (BF_3 or TMSI) – of intramolecular [2+2] photocycloadducts of 6-alkenyl-2,3-dihydro-4-pyrones, synth of phenols, 1663
chloro-dienes and -trienes, synth from propargylic alcohols *via* Pd-catalyzed – of allylic acetates, 6547
of 1-(3-chloropropyl)-cyclopropanol into 5,6-dihydro-4*H*-pyrrolo[1,2-*b*]pyrazole followed by bromination and phenylation, synth of withasomnine alkaloid, 1095
chorismate-prephenate –, kinetics and activation parameters for chorismate mutase catalyzed reaction, 2691
Claisen- of allyl phenyl ether with trapping of phenol produced by methylation, 7889
Claisen- Pd(II)-catalyzed, regiocontrol by *in situ* enol ether exchange, 7991
Claisen- in synth of 3-cyanomethyl-3-(1,1-dimethylallyl)-indolin-2-one, 7525
Claisen –, chelate-enolate, synth of α-alkyl α-amino acids with unsaturated side chains, 5351
Claisen – of allylic esters mediated by silyl triflate, stereochemical control in, 3005
Claisen –, Pd-catalyzed, of 2-allyloxypyridines to *N*-allyl-2-pyridones, 2829
Claisen ester enolate, chiral synth of α-allylic glycine derivs using $Al(OiPr)_3$/quinine catalyst, 7945
Cope, of *exo*-[4+4] cycloadduct of 1-naphthalenecarbonitrile to furan, 9329
Cope –, of methyl 5-hydroxytricyclo[5.2.1.0^{2,6}]-deca-3,8-diene-2-carboxylate in synth of functionalized hydrindanedicarboxylic acid, 2335, corrig. 7665
Cope – of tricyclo[5.2.1.0^{2,6}]decadienone 2-carboxylic ester on acetalisation with ethylene glycol, 7827
Cope, allylation/Cope rearrangement sequence and asymmetric aldol/oxy-Cope strategy for synth of γ-chiral and γ,δ-dichiral α,β-unsaturated acid derivs respectively, 8895, 8899
cyclisation and subsequent methylthio – of *endo*-thioester substituted norbornenes, synth of a diacetal trioxa-cage compd, 8209
cyclo-aromatization of propargyl β,β-di(alkylthio)vinyl benzyl alcohols using $B(OMe)_3$, migration of an alkylthio group, 2817
cyclopropyl carbenes and precursors, cyclobutenes proposed to arise from carbene precursors, 8333, 8337
deprotonation and – of (1-heterodiene)tricarbonyliron(0) complexes, synth of (2-aminohomodiene)tricarbonyliron(0) complexes, 691
of 2,2-dialkyl-1,3-dibenzyl-2,3-dihydrobenzimidazoles to 1-benzyl-3,3-dialkyl-2-phenyl-1,2,3,4-tetrahydroquinoxalines, 3355
of 3,4-diazanorcaradiene 3-(dicyanomethylides) in methanol and acetic acid, 1587
1,5-di-t-butylbicyclo[2.2.2]octa-5,7-diene-2,3-dione, BF_3-catalyzed – to 1,6-di-t-butylbicyclo-[3.2.1]octa-3,6-diene-2,8-diones, 8271
Diels-Alder reactions of 5-trimethylsilyl-2-furfuryl propargyl ethers followed by trimethylsilyl group 1,2-rearrangement and Brook rearrangement, 7395
dienyl spiro-cyclopropanes, – to vinyl spiro-cyclo-

pentenes, 3565
1,4:2,3-diepoxycyclohexane derivs, Lewis acid-catalyzed – to cyclopentane derivatives, 2877
[2,3]- – of difluoroallylic alcohols with C-P and C-S bond formation, formation of sulfoxides and phosphine oxides, 6403
9,10-dihydro-9,10-ethenoanthracene anionic derivs, – by triplet sensitization from amino-ketone cations in solid state, 6037
of 4-PhS-1,3-diols with TsCl in pyridine, synth of allylic alcohols, scope and limitation of the [1,4] SPh shift, 1117
of the *trans*-α,β-epoxy acylates in tetrahydrobenz-[*e*]indan systems, synth of spiro[cyclopentane-1,1′-indan]-2,5-dione system, 1817
Ferrier – of 6-deoxyhex-5-enopyranosides into cyclohexanones mediated by palladium chloride, 649
Fries, use of $ZrCl_4$ as catalyst/mediator, acceleration by ultrasound, 7659
1,4– from O to N of heterocyclyl group in 3-heterocyclyloxy-4-(sec-amino) chroman derivs, 4447
of 6β-hydroxy-gibberellin-7α-carboxaldehyde resulting in ring-expansion of the B-ring to afford functionalised 20-norkaurenoids, 8937
2-iminooxetanes by base-promoted – of 4-formyl-isoxazolidines, 917
isomerization of polyhydroxy pyrrolidines, piperidines, and azepanes, 1609, 1613
LDA-induced – of phenyl-substituted and alkyl-substituted epoxydisilane to β-trimethylsilyl-acylsilane and silanols respectively, 5613
of ledene and aromadendrene in superacidic media, conversion into compds with the natural cubane skeleton, 2631
Meisenheimer – of 3-t-butyldimethylsiloxy-8-methyl-8-azabicyclo[3.2.1]oct-6-ene *N*-oxide, subsequent cleavage, hydrogenation, oxidation and deprotection yields 3-hydroxy analogue of physoperuvine alkaloid, 97
7-methoxy to 5-methoxy tetralin – mediated by $ZrCl_4$, 3607
4-methylene-1,3-dioxans, $AlBu_3$-catalyzed – to tetrahydropyran-4-ones, 141
Meyer-Schuster, catalyzed by $MoO_2(acac)_2$ in DMSO or with added Bu_2SO, 853
octahydronaphthalene skeletal – catalyzed by I_2 in synth of isofregenedane diterpenoids, 1659
of oxonium ylids, 5053
oxy-Cope – in synth of 9α-alkylated equilin derivatives, 6103
Pd-catalyzed – of α-benzoyl allyl sulfoximines, synth of γ-amino-αβ-unsaturated ketones, 5417
4-phenylsulfonyl-1,6-dioxaspiro[4,5]decan-10-ones, Na/Hg reductive – to 5-hydroxy-1,6-dioxadecalins, 3179
photo– of α-halo aryl ketone to 1-methyl-1-(*p*-tolyl)acetic acid, key step in synth of α-cuparenone terpene, 2629
photo-Fries reaction of naphthyl esters within zeolites, 6251
photochemical – of 7β,9α-di- and 7β,8α,9α-triacetyloxylongipin-2-en-1-one, synth of vulgarone A and pingilonane, 8093
photochemical – of 9,10-disubstituted triptycene-1,4-quinone derivs, mechanisms, 2121
photoinduced through-bond electron transfer and rearrangement in *N*-[ω-(*p*-nitrophenoxy)alkyl]-anilines, 505
of pyranosylated indolocarbazole, production of the K252a carbohydrate moiety, biosynthetic link between K252a and staurosporine, 3929
radical – of (+)-ferruginine, tropane alkaloid, route to functionalised 6-azabicyclo[3.2.1]octane system, 2201
Ramberg-Bäcklund – of chlorosulfones formed from a cyclopregnane-20-thiomethanol deriv, synth of Δ^{22}-unsaturated steroids, 29
reverse-Cope mechanism rather than acid-catalysed process in intramolecular cyclisation of hydroxylamines derived from limonene, 6417
[1,3] sigmatropic – of 8,9-diphenyltricyclo-[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one *via* a singlet excited state, 7065
silyloxy-Cope – of chiral aldol adducts, 4471
4-(α-silyloxy- and -benzyloxy-alkyl)oxetan-2-ones, $MgBr_2$-catalyzed – to 4-oxy-dihydrofuran-2-ones, stereocontrol, 245
spirocyclopropane isoxazolidine, – to deriv of (2*S*)-4-oxopipecolic acid, 4205
Stevens – of ammonium ylids formed on reaction of methyl 3,3,3-trifluoro-2-diazopropionate with amines and amides, synth of α-trifluoromethyl-α-amino acids, 615
Still-Wittig – of stannylated methyl (*E*)-allylic ethers having an aliphatic side chain, synth of *Z*-disubstituted olefins, 389
tandem cyclisation-Stevens – of alcohols mediated by Ph_3P/DEAD or Bu_3P/ADDP, 8133
tandem cyclopropanation/Cope rearrangement sequence for synth of the tremulane skeleton, 3967
tandem cyclopropylcarbinyl-oxiranylcarbinyl radical – in synth of prostaglandin B_1 compds,

809
thermal – of 7-vinylnorcaradienes, synth of products from the vinylcyclopropane-cyclopentene rearrangement and from the Cope rearrangement *via* a common biradical, 7761
thermal – of halogenated dimethylenecyclobutane and methylenecyclobutene derivs, synth of styrene derivs, 5099
thermal – of *N*-alkyl-*N*-vinylpropargylamines into 2-methylpyrroles, synth of annulated[*b*]pyrroles, 6709
thia-Fries rearrangement of aryl phenylsulfinates, synth of (phenylsulfinyl)phenols, 7
of 2-vinylbicyclo[2.2.2]octenols, synth of *cis*-decalin and bicyclo[4.2.2]dec-7-en-4-one derivs from 2-methoxyphenols, 5897
Wagner-Meerwein, in cyclizations of 9-(ketocycloalkylmethyl)fluorenes, 1535
1,2-Wittig – of α-lithiobenzyl carbamates, 6061
[1,2]-Wittig – of benzyl and allyl ethers of monomethoxymethyl binaphthol, formation of a chiral binaphthyl auxiliary, 8903
Wittig-Still, Si-Li exchange and – in trimethylsilylmethyl allyl ethers, 2403
Wolff, of 5-diazotricyclo[5.1.0.0^{1,3}]hexan-4-one, a two-carbon bridged spiropentane, photo– at 15 K, 8285

Receptors
adenophostin A, tetraphosphorylated disaccharide nucleoside with IP_3 receptor agonist properties, synth, 3599
application of a peptide library to identify selective interaction between small peptides in an attempt to develop recognition molecules toward protein surfaces, 85
bifunctional –, calixarene tetracetic acid as cation – and Zn-porphyrin as anion –, associated by barbituric acid–melamine H-bonding, 9341
cleft type receptors for butenolides based on chromenone derivs, synth, 1485
2(5*H*)-furanone, H-bonded to a ureido-chromone-2-carboxamide, catalysis of pyrrolidine addition, 6947
18-membered diamide-diester-thioether, synth and association behaviour, selective extraction of Ag^+, 2071
receptor models, design and synth of a novel tricyclic scaffold for the assembly of, 7035
Stoddart's cyclobis(paraquat-*p*-phenylene) receptor for recognition of phenyl glycopyranoside and β anomer of phenyl glucosides, 263, 287
synthetic receptors based on peptidosulfonamide peptidomimetics, synth and binding selectivity against a tripeptide library, 8253
see also Molecular recognition

Reduction
of 3-*O*-acetylated sugar 1-nitro-1-alkenes with zinc and acetic acid, route to 2,3-unsaturated sugar derivs, 415
of the aldol products from boron-mediated aldol reactions of β-oxygenated methyl ketones with achiral aldehydes, synth of 1,3-polyols, 8585
and *meso*-alkylation of *meso*-tetraphenyl- and octaalkylporphyrins, synth of phlorins, 7699
of allylic ethers in the presence of a nickel catalyst, 3613
ammonium formate/Pd-C a convenient reducing agent in the preparation of phosphorylcholine affinity columns, 7921
anodic oxidation of vindoline followed by reduction of the formed intermediate, synth of 10,10′-bisvindoline, 3659
of azobenzenes and azoxybenzenes to hydrazobenzenes by sodium dithionite using dioctylviologen as an electron transfer catalyst, 6721
of *B*-(*o*-benzoylbenzoyloxy)diisopinocampheylborane, asymmetric synth of 3-substituted 1(3*H*)-isobenzofuranones, 2205
Birch – and reduction-alkylation of 3,4-dihydro-3-methyl-8-phenylcoumarin, 6511
Birch – of silylated furan-3-carboxylic acid, formation of 2,3-dihydro system, 9119
of t-butylcyclohexanone by lithium aluminium hydride, importance of entropy in stereoselection, 2185
of C_{60} to C_{60}^- and C_{60}^{2-} by reduction with zinc powder in aqueous NaOH/THF, 7409
of the carbonyl group of organomercurials, mercury is retained if protected by methylation, synth of annulated lactones, 5585
catalysis of sulfoxide – by PPh_3 using $ReOCl_3(PPh_3)_2$, 7941
CBS-reduction of ferrocenyl diketones, synth of C_2-symmetrical 1,1′-ferrocenyl diols, 25
chemoselective – of azidopyridazines to corresponding aminopyridazines using Fe/NH_4Cl in organic solvent-water two-phase solution, 7059
chloro(diisopinocampheyl)borane, chiral reduction of diacylaromatics to C_2-symmetric diols, 3795
complex hydride – of *N*-(2-hydroxy-2-phenylethyl)-*N*-(3-oxo-3-phenylpropyl)-benzylamine, bicyclic chelate structures controlling diastereo-

selection, 7897
conversion of α-tetralones into 1,2-dihydronaphthalenes by hydride donation from pentane-2,4-diols in presence of *p*-TSA, 1941
of 2-(β-cyanoalkyl)oxazolines to cyclic amidines, synth of (*S*)-4-methylpyrrolidin-2-one from (*R*)-phenylglycinol derived oxazoline, 3993
DIBA-H reduction of *O*-TBDMS derivs of cyanohydrins followed by hydrolysis, synth of *O*-protected 2-hydroxy aldehydes, 5893
diborane −, use of 2-phenyl-1,3,2-oxazaphospholidine 2-oxides as chiral catalysts, 8351
1,7-dioxaspiro[5.5]undecane alcohols, regio- and stereo-selective reductive cleavage, 5649
electrochemical − of a mixture of cobalt(II)-(salen) and benzotrichloride, synth of 1,1,2,2-tetrachloro-1,2-diphenylethane and 1,2-dichlorostilbene−diphenylacetylene, 8105
electrochemical, of hydroxypicolinoyl group in pristinamycin I_A, cyclic depsipeptide, effect of macrocycle ring-opening, 7499
enantioselective − of 2-aroyl-pyridines and *N*-allylpyridinium triflates and benzophenones usingoxazaborolidine-catalyzedcatecholborane, 5675
enantioselective − of ketones by borane with chiral phosphinamide catalysts, 2853
enantioselective − of *p*-chlorobenzophenone-$Cr(CO)_3$ complex, 4837
enantioselective radical-chain hydrosilylation of alkenes using chiral thiol catalysts, 9123
enantioselective reduction using alcohol dehydrogenase from *Geotrichum candidum*, different configuration of products from methyl and trifluoromethyl ketones, 5727
of enediynes to the corresponding [m,5,n] tricyclic compds *via* alkylpalladium intermediates, 8875
of 1-hydroxyiminophosphonates with $NaBH_4$ in the presence of molybdenum or nickel, synth of 1-aminophosphonic acids, 407
hydroxyl-directed reductive ring opening of functionalised 2-aryloxetanes at the C-2 position, synth of triols, 4363
of α-hydroxypyrrolidine, key step in synth of (−)-codonopsine antibiotic alkaloid, 5531
endo-endo intramolecular reductive cyclisation of a 1,4-diyne using lithium naphthalenide followed by oxidative coupling, synth of 1,1′-bicyclopentadiene, 2983
of a β-keto phosphine oxide oxazolidine and reaction of an oxazolidine aldehyde with a lithiated phosphine oxide, synth of *S* or *R* β-hydroxy phosphine oxides, 3051
of α-ketoesters bearing 5(*N*-methylbenzoylamino)-2,2,6,6-tetramethylheptan-3-ol as a chiral auxiliary, synth of α-hydroxy carboxylic acids, 1863
of ketones by borane catalysed by oxazaphospholidine oxides, 39
of β-ketophosphine oxides, synth of *anti*-β-hydroxyphosphine oxides, 7421
$LiAlH_4$ reduction of 2-(isopropylsulfonyl)-bicyclo-[2.2.1]hept-5-ene-2-carbonitrile *via* a radical intermediate, 4717
lithium *B*-[2-(2-dimethylaminoethyl)isoapocampheyl]-9-borabicyclo[3.3.1]nonyl hydride, chiral ketone reducing agent, 3791
low-valent Ti (McMurry) − of 2- and 3-pyrrylaldehydes and 3-pyrrylketones, formation of olefins, coupled dipyrrylethanes, and other products, 2721
of methyl benzoylformate with NADH models, synth of both enantiomers of methyl mandelate, 3275
Ni-promoted reductive cyclization of dienyl aldehyde, effect of added diene, 887
nitroalkenes, selective − to enamides using Fe, 1605
olefin − using borane and diimide, synth of dihydro-B-nortestosterone and its 17α-methyl deriv, 6221
pinacol − of arylaldehydes using $Yb(SPh)_2$, 3465
reductive amination of methyl 9-ketododecanoate, synth of 9-propyl-10-azacyclododecan-12-olide, component of defensive secretion of Mexican bean beetle, 2141
reductive amination of substituted cyclohexenones with sodium triacyloxyborohydrides, synth of protected axial amines, application to prep of 3-*endo*-tropanamine, 3977
reductive amination using sodium triacetoxyborohydride, synth of tertiary diamines, 6081
reductive cleavage of the sulfide bond in xanthates, synth of the corresponding alkane, 5877
reductive cyclisation of a 1,1-dibromoalkene to an acetylene, key step in synth of the core unit of homopumiliotoxin alkaloids, 7151
reductive cyclisation of an azide employing hexamethyldisilathiane, synth of pyrrolo[2,1-*c*][1,4]-benzodiazepine antibiotics, 6803
reductive cyclisation of *N*-iodoalkyl cyclic imides to nitrogen-fused polycyclic amides induced by samarium diiodide, 2577

regio- and stereoselective reductions of α,β-unsaturated ketones and cyclohexanones and -hexenones in aqueous glycosidic media, 53
solid phase reductive alkylation of secondary amines using borane-pyridine complex (BAP), 4819
of tertiary amides to primary alcohols using lithium amidotrihydroborate, 3623
transfer hydrogenation of enones and ketones, use of triethylammonium hypophosphite and Ru(II) catalysts, diastereoselection, 6599
triethylsilane – to prepare *N*-Fmoc-protected *N*-methyl amino-acids, 263
of αβ-unsaturated ketones and nitriles by iodotrichlorosilane, 2297
of vinylic epoxides with chiral dialkylboranes, 7131
see also Hydrogenation

Reformatsky reactions/reagents
Reformatsky-type reaction with manganese metal activated by catalytic amount of $PbCl_2$ and Me_3SiCl, 7049
synth of pyrrolidin-2-ylidene malonate esters involving Reformatsky-type reaction between bromomalonate and a thiopyrrolidone, synth of tricyclic analogues of quinolone antibacterials, 9403

Regiocontrol
Pd(II)-catalyzed Claisen rearrangements, – by *in situ* enol ether exchange, 7991
diethyl azodicarboxylate (azodiformate), ene reactions with allylic and homoallylic silanes, 6607
switching regiocontrol in 1-aryl-substituted cyclohexadienyliron complexes in a synth of lycoramine alkaloid, 6283

Regioselection
calix[8]crowns by direct alkylation of *p*-t-butylcalixarene, – and effect of base strength, 3899
cycloaddition of phenylcyclopentadienes to α-thioacrylonitriles, concerted reaction with radicaloid transition state favoured, 2417
in dihydroxylation of 2-hydroxymethyl- and 2-hydroxyethyl-1,3-butadiene derivs using bis-cinchona alkaloid catalysts, 1735, 1739
1,3-dipolar cycloaddition of *N*-benzyl-*C*-carboxynitrone to various olefins, effect of added triethylamine on –, 6157
effect of the anchoring sites of the spacer and the reaction temperature on regio- and stereoselectivity of glycosylation of several template linked monosaccharides, 1105
of epoxidation of simple olefins and allylic alcohols catalysed by WO_4^{2-}-exchanged LDH, 8557
intramolecular cyclization of halo-alkene group to alkene in acetonitrile-water, influence of solvent on regioselectivity, 2003
introduction of di(methoxycarbonyl)methyl group into γ-position of piperidine skeleton, 5715, corrig. 8063
regioselective Ni-catalysed alkylation and hydride addition of allylic ethers, 3613
regioselective ribosylation of 6,7-dichloroimidazo[4,5-*b*]quinolin-2-one, synth of 6,7-dichloro-1- and 3- (2,3,5-tri-*O*-benzoyl-β-D-ribofuranosyl)imidazo[4,5-*b*]quinolin-2-one, 3263
remote substituent control of regioselectivity of arylation of 2-*exo*-cyano-7-oxabicyclo[2.2.1]hept-5-en-2-*endo*-yl acetate and 7-oxabicyclo[2.2.1]-hept-5-en-2-one, 2225

Reissert reactions
closure of dynemycin system by acetylenic –, 8687

Resins
anion exchange – for synth of mixtures of aryl and heteroaryl ethers, 5257
aryl bromides bound to a polystyrene resin, coupling reactions with aryl zinc bromides, liberation of the biaryl carboxylic ester by transesterification, 5491
2-chlorotrityl chloride resin and Dde as selective and orthogonal primary amine protecting groups, use in solid phase synth of protected symmetrical polyamines, 2626
ion-exchange resins as catalysts for monoesterification of α,ω-dicarboxylic acids, 6733
MBHA resin, acylation with an allyl linker for use in solid phase synth of peptide aminoalkylamides, 3031
Merrifield resin-bound tryptophan, Pictet-Spengler reaction with aldehydes, synth of tetrahydro-β-carbolines, 3963, 5041, 5631
resin bound azomethine ylid, three component 1,3-dipolar cycloaddition of, solid-phase synth of proline analogues, 3671
resin bound teicoplanin aglycone as a molecular scaffold for solid phase synth of combinatorial libraries, 6319
tryptophan linked to the Kaiser oxime resin, Pictet-Spengler reaction with aldehydes, synth of 1,2,3,4-tetrahydro-β-carboline derivs, 3963
Wang resin bound H-phosphonates for condensation of imines, synth of α-amino phosphonates and phosphonic acids, 5457

Resolution
of acids and alcohols by use of *Candida rugosa* lipase, comparison of enantioselectivities from use of cross-linked enzyme crystals and crude CRL, and in aqueous *vs* organic solvents, 6507
of α-alkoxystannanes *via* the methoxymenthyl ethers with subsequent regioselective acetal exchange or cleavage of the acetal group to the α-hydroxyalkylstannane, 6649
approach to Sch 42427/SM 9164, chiral azole antifungals, *via* large scale chromatographic resolution, 611
catalytic racemization of alcohols, application to enzymatic kinetic resolution, 7623
chemoenzymatic resolution and deracemization of (±)-1-methyl-1,2-epoxycyclohexane, synth of (1*S*,2*S*)-1-methylcyclohexane-1,2-diol, 8819
crystallization-induced dynamic kinetic – of dipeptide-derived 5(4*H*)-oxazolones, 6575
of *Z*-γ,γ′-di-t-butyl-D,L-carboxyglutamic acid methyl ester using endoprotease papain, 417
di-*O*-(anilinocarbonyl)tartaric acid, (*R,R*)- and (*S,S*)- forms for optical – of 6,6′-dimethoxybiphenyl-2,2′-diamine, 5343
diene-Fe(CO)$_3$ complexes, enantiomer separation by HPLC on cyclodextrin-bonded stationary phase, 2405
(4*R*,5*S*)-1,5-dimethyl-4-phenylimidazolidin-2-one, auxiliary for dynamic kinetic – of α-bromopropionic acid derivs, crystallization-induced –, 1301
dynamic kinetic – of allyl acetates by enzymatic hydrolysis to the corresponding allyl alcohols, 1859
dynamic kinetic – of epichlorohydrin in enantioselective catalytic ring-opening by TMS-N$_3$/(salen)Cr(III)-N$_3$, synth of chiral oxazolidinones, 7937
dynamic kinetic resolution of 5-hydroxy-2(5*H*)-furanones catalysed by lipase PS, 4759
enzymatic – of 7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid methyl ester, synth of a precursor to substrates for the ring-opening metathesis polymerisation, 8853
enzymatic – of alcohols using 1-ethoxyvinyl acetate as a novel, highly reactive acyl donor, 7369
enzymatic – of amines and amino alcohols using pent-4-enoyl derivs, 6287
enzymatic – of homoallyl alcohols leading to synth of fluoxetine and related compds, 9253
enzymic – of acetyloxymethyl cycloheptatriene Cr(CO)$_3$ complexes, [6+4] photocycloadditions to dienes, synth of chiral bicyclo[4.4.1]undeca-2,4,8-triene systems, 5293
of5-hydroxytricyclo[5.2.1.0^{2,6}]deca-4,8-dien-2-one using chiral amines, chiral synth of tricyclo-[5.2.1.0^{2,6}]deca-4,8-dien-3-one, 8003
(2-iodophenyl)methylphenylmethanol, *via* H-phthalate strychnine salt, synth of chiral 1,3-dihydro-3-methyl-3-phenyl-2,1λ^3-benzoxiodoles, 6453
kinetic – of an α-furfurylamine deriv derived from 2-furaldehyde, synth of 1-deoxy-azasugars, 1461
kinetic – of *o*-chloroanisole-Cr(CO)$_3$ by chiral Pd-catalyzed alkoxycarbonylation, 167
kinetic – of racemic β-keto esters, synth of C1-C9 segment of bryostatin, 1767
kinetic – of *sec*-alcohols using axially chiral twisted amides, 4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, 6777
kinetic – of vinylic epoxides by reduction with chiral dialkylboranes, 7131
lipase-catalysed – of racemic 2-hydroxymethyl-1-methylthioferrocene, 127
of *anti*-3-oxotricyclo[2.2.1.0]heptane-7-carboxylic acid by *Candida antarctica* lipase A, 3975
Resorc(in)arenes
see Calixarenes
Retinoids
7-*cis*-8-fluororetinal, x-ray crystal structure, 4103
methyl 7,8,11,12-tetradehydroretinoate, synth from 1-ethynyl-2,6,6-trimethylcyclohexen-1-ol, 3971
Rhenium and compds
catalysis of sulfoxide reduction by PPh$_3$ using ReOCl$_3$(PPh$_3$)$_2$, 7941
chiral Re(cpd)NO(PPh$_3^+$ complexes of allylic, homoallylic, and propargylic alcohols, synth, reactions, 1225
dihydrofuranyl Fischer carbene complexes carrying thioether groups, oxidation to sulfoxides by methyltrioxorhenium/H$_2$O$_2$, 9385
methyl trioxo-Rh and urea-hydrogen peroxide for regio- and stereo-selective epoxidation of alkenes, 2717
methyltrioxo-Re(VII)/H$_2$O$_2$ for oxidation of organo-N compds, 805
methyltrioxorhenium as catalyst for direct oxidation of secondary amines, synth of nitrones, 6025
oxidation of saturated alkanes and benzenoid aromatics by H$_2$O$_2$ in air catalyzed by methyl-

trioxorhenium, 6487

Rhodium and compds

Rh-catalyzed CH insertion in chiral ester-diazoanilides, 145

chiral Rh_2(II)-catalyzed insertion of carbenoid into Si-H bond, 12 ligands tested, 7631

Rh_2(II) carboxylates, synth from half phthalate esters and pyrroles, use as catalysts for decomposition of diazocarbonyl compds, 107

Rh_2(II) tetrakis[methyl 1-acylimidazolidin-2-one-4(*S*)-carboxylates] as catalysts for carbon-hydrogen insertion reactions of pyrrolidine-diazoacetamides, 1371

Rh_2(II) tetrakis((*R*)-*N*-(*p*-(dodecyl)phenylsulfonyl)prolinate) as catalyst for the tandem cyclopropanation/Cope rearrangement sequence in synth of the tremulane skeleton, 3967

Rh_2(II) carboxylates and carboxamides as catalysts for decomposition of a glycine-derived diazo acetoacetamide, 6981

Ring expansions

of *N*-hydroxyethyl lactam, synth of 9-propyl-10-azacyclododecan-12-olide, component of defensive secretion of Mexican bean beetle, 2145

ring expansion reactions of conformationally-restricted 2-alkenylcyclopropylcarbene-chromium complexes to 5-alkenyl-2-cyclopentenones, 1359

Ring transformations

3-aminopyridazines by ANRORC reactions from 3-chloro- and 3-methylthio-1,2,4-triazines with C-nucleophiles, 5795

Tl(III) trifluoroacetate ring expansion of 1-vinyl cyclobutanol and cyclopentanol trimethylsilyl ethers to 2-methylene cyclopentanones and cyclohexanones, respectively, 3865

Ritter reactions

– of cyclic hydroxy-amines, 3-acetamido-3-alkyl azetidines and pyrrolidines, 3- and 4-acetamido-4-alkylpiperidines, 1297

using trimethylsilyl cyanide, conversion of alcohols to their corresponding formamides, 8129

Rotaxanes

[3]– and [3]-pseudo– precursor with two dibenzo-[24]crown-8 mols surrounding tri-*p*-xylylene-diammonium chain end-capped by 4,5-di-t-butoxycarbonyl-1,2,3-triazol-1-yl and azido groups, respectively, structures, 6217

Ruthenium and compds

RuO_4 reaction with ethyl 2,2-dimethoxycyclopropane-1-carboxylates and methyl 2,2,6,6-tetramethoxybicyclo[2.2.0]hexane-1-carboxylates by RuO_4, oxidative scission, 527

Arene-Ru-Cp^+ complexes in selective synth of chlorinated diaryl ethers and triaryl diethers, 735

C_2-symmetrical diaminoferrocenyl derivs and 2-amino(sulfonamido)cyclohexanes as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165

chiral Ru porphyrin as enantioselective styrene epoxidation catalyst, 7325

cyclopropyl methylene groups to cyclopropyl ketones by RuO_4, ring cleavage under similar conditions when methyne group is oxidized, 2425

dinuclear ruthenium complexes, prep using functionalised mononuclear complexes as building blocks in Suzuki procedure with a difunctionalised aromatic spacer, 2963

dioxoruthenium(IV) porphyrins, oxidation and chiral recognition of racemic amino esters by, formation of mixed-ligated imino ester/amino ester Ru(II) complexes, 6701

$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815

Ru[(*R*)-2,2′-bis(diphenylphosphino)-1,1′-binaphthyl]$(O_2CCH_3)_2$ as catalyst for asymmetric hydrogenation of *N*-tosylimines, 6669

ruthenium complexes of chiral phosphinooxazolines as catalysts for enantioselective transfer hydrogenation of alkyl aryl ketones, 1381

Samarium and compds

aldol-type reactions of aldimines forming $\alpha\beta$-unsaturated imines catalyzed by Sm compds, 7291

azomethine ylid Sm(III) complexes, cycloaddition to $\alpha\beta$-unsaturated esters, synth of 1-pyrrolines, 6573

diiodosamarium as catalyst precursor for ene reactions of unsaturated carbonyl compds, 5195

Sm(III) enolates, catalytic enantioselective protonation using C_2-symmetric chiral diol, 2805

Julia-Lythgoe olefin synth from ketones, requirement for SmI_2, 2089

metallic Sm for reductive halogenation of aliphatic *vic*-dihalides, 9313

phenoxy- and acetoxy- 6-iodo-6-deoxyglycosides into methylcyclopentanols using SmI_2, 5817

reaction with α-chloroalkyl α′-chloroalkyl ethers, synth of carbonyl ylids, 9241

SmI_2 reduction of dialdehyde in synth of D-*myo*-inositol derivative, 885

reductive coupling of phenacyl bromide to acyl chlorides and anhydrides using SmI_2, synth of β-diketones, 3885
samarium diiodide for dimerisation of α-keto amides, synth of tartaric amides, 7755
samarium(II) iodide/HMPA for di-selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides, synth of *trans*-1,2-cyclopentanediyl-2,2'-biphenol, 8505
SmI_2 in a 6-exo-dig radical cyclisation approach towards (±)-erigerol, 5523
SmI_2 in mixed pinacol coupling to form taxane intermediate, 2321

Scandium and compds
polymer-supported scandium catalyst (PA-Sc-TAD) for three-component reactions between aldehydes, amines and silylated nucleophiles, synth of β-amino ketones, β-amino esters and α-amino nitriles, 9221
scandium trifluoromethanesulfonate, catalyst for the addition of allyltrimethylsilane to aldehydes, 3745

Schiff bases
see Imines

Schmidt reactions
approach to chiral synth of sparteine by intramolecular –, 1531

Selenium and compds
dialkyl-phenylseleno-alanes, regiospecific hydroselenation of terminal acetylenes, synth of 1-alkyl-1-phenylseleno-ethenes, 9005
diphenyl selenide, catalytic role in stannane mediated vinyl iodide cyclizations, improvement of 5-*exo*/6-*endo* ratio, 3105
1,3-diselenanes, reaction with metal amides, synth of 2-metallo-diselenanes bearing the metal in equatorial position, 2667
β-hydroxyselenides obtained by Mukaiyama reaction of *N*-protected β-amino α-selenyl aldehydes, conversion into oligopeptides containing an oxirane ring in the place of a peptidic bond, 2651
methoxy-selenenylation of allylic alcohols and derivs, stereochemistry, 1249
α-phenylseleno-γ-keto esters and γ-butyrolactones, synth by reaction of α-chloro-α-phenylselenoesters with silyl enol ethers, 9173
radical photo-addition of 1,3-dithian-2-yl phenylselenide to electron-deficient alkenes, 2743
synth of allyl and propargyl selenides in aqueous medium promoted by indium, 9333
trifluoromethyl selenoethers from CF_3SiMe_3 with diselenides, 6865
αβ-unsaturated selenyl esters, radicals from and cyclization to adjacent double bonds, 271

Selenium heterocycles
1,3-diselenanes, reaction with organolithiums, H/Li or Se/Li exchange depending on substitution, 8011, 8015

Selenoacetals
1,3-diselenanes, reaction with organolithiums, H/Li or Se/Li exchange depending on substitution, 8011, 8015
homoallylaldehyde –, Lewis-acid catalyzed coupling of allylsilanes with tris(phenylseleno)-methane, 6085
ketene butyltelluro(phenylseleno)acetals by Al/Te exchange reaction, 831

Selones
see Selenoaldehydes

Shapiro reactions
combined Shapiro-Suzuki reaction to provide aryl-alkenes without isolation of the boron containing intermediates, 429
tritiated alkenes by conversion of the trisylhydrazone deriv of a ketone to the vinyllithium intermediate which could be quenched with tritiated water, 2923

Siderophores
pyoverdins produced in iron-deficient cultures of *Pseudomonas fluorescens*, structural elucidation, 3329

Silicon and compds
2,2-dimethylcyclopropanone silyl acetal, irradiation of a solution containing 1,1-dicyano-2-phenylethene or 1,2,4,5-tetracyanobenzene with – in the presence of phenanthrene, introduction of a C_3 unit, 2975
4-methyl-3-pentenyldiphenylsilanol, intramolecular iodosilyletherisation of, synth of 6,6-dimethyl-5-iodo-2,2-diphenyl-1-oxa-2-silacyclohexane, 6781
2-(acetoxymethyl)-1,1-difluoro-3-(trimethylsilyl) prop-1-ene, preparation and uses, 5401
acylsilanes with alkene or alkyne functionalities attached to silicon, tandem radical cyclisation of, synth of cyclic silyl ethers which could be oxidatively hydrolysed to give diols or ketone alcohols, 7767
α-alkoxysilanes, synth of 2-trialkylsilyl tetrahydrofurans, oxidative (CAN) removal of Si and cyclization forming perhydrofuro[2,3-*c*]-pyran system, 9119
allylic and homoallylic silanes, ene reactions with diethyl azodiformate, regiocontrol, 6607
allylsilanes, Lewis-acid catalyzed coupling with

tris(phenylthio/seleno)methane, synth of homoallylaldehyde thio/selenoacetals, 6085
allylsilanes, synth by metathetical cross-coupling of terminal olefins with allyltrimethylsilane, 2117
allyltrimethylsilane, addition to aldehydes catalysed by scandium trifluoromethanesulfonate, 3745
asymmetric hydrosilylation of cyclic 1,3-dienes by $SiHCl_3$ catalyzed by chiral phosphine-Pd complex, 4169
asymmetric intramolecular cyclopropanation of a silyl enol ether, synth of phorbol CD ring skeleton, 2449
3-azido-1-chloro-2-trimethylsilyloxypropane, enantioselective synth from epichlorohydrin involving dynamic kinetic resolution, 7937
1,1-bistrimethylsilyl-2-phenyl-2-trimethylsilyloxy silene, generation and trapping by dienes, diastereoselectivity, 2491
α,β-bistrimethylsilylstyrene, reaction with lithium metal, dianion formation and Schlenk dimerization, NMR study, 8719, 8723
bromomethyldimethylsilyl αβ-unsaturated esters, intramolecular radical cyclization, 1,2-oxasilacyclohexan-6-ones and -cyclopentan-5-ones, 8363
bromomethyldimethylsilyl allyl ether, diastereoselective triple radical cyclisation of, construction of the B-ring of taxanes, 6295
N,O-bis(t-butyldimethylsilyl)acetamide for efficient t-butyldimethylsilylation of alcohols, 605
t-butyldimethylsilyloxymethyl group, protecting group for adenine, 7833
carbohydrate-derived acylsilanes, synth, and use in synth of *gem*-difluoro-*C*-disaccharides, 6113, 6117
chiral Rh_2(II)-catalyzed insertion of carbenoid into Si-H bond, 7631
chiral *N*-tosylnorgranatanone silyl enol ether, cyclopropanation, 4987
conjugate addition of $PhMe_2Si$ groups to α-methylene ketones, use of silyl cuprate with addition of Me_3SiCl, Si to OH conversion, 6929
cyclopropyl carbenoids containing silicon in close proximity to the carbenoid center, reactions of, 579
cyclopropylmethyl silanes, mercuri-desilylation with ring opening, formation of homoallylmercury compds, stereochemistry, 1209
dialkynes with orthogonal protection by $SiMe_3$ and $GeMe_3$ groups, 7959
1,3-diisopropyl- and 1,3-ditertiobutyl-2,2,4,4-tetramethylcyclodisilazanes, flash vacuum thermolysis of, 3317
2-(dimethylphenylsilyl)alk-3-en-1-ols,asymmetric induction in epoxidation and cyclopropanation reactions, 1205
dimethylsilanethione ($Me_2Si=S$), generation by retro-ene cleavage of propargylthiodimethylsilane and cycloaddition with ketene, 7017
effect of presence of silicon group on reactivity of carbonate and acetate in palladium-catalysed nucleophilic substitutions, 8483
enantioselective radical-chain hydrosilylation of alkenes using chiral thiol catalysts, 9123
Si-Li exchange and Wittig-Still rearrangement in trimethylsilylmethyl allyl ethers, 2403
2-functionalised allyl tris(trimethylsilyl)silanes, synth by reactions of allyl phenyl sulfides with tris(trimethylsilyl)silane, subsequent use as radical-based allylating agents, 6383, 6387, 6391
hydrosilylation of arylacetylenes by bisdimethylsilylacetylene and bisdimethylsilylbutadiyne, 1579
iodo-desilylation of vinylsilanes, conditions for effective use of *N*-iodosuccinimide, 8647
iodotrichlorosilane as reducing agent for αβ-unsaturated ketones and nitriles, 2297,
methylene silacyclohexanols by type II intramolecular carbonyl ene reactions of vinyl silanes, 3411
optically active α,β-epoxysilanes and silylaminoalcohols, synth from the corresponding chiral diols, 555
oxidative silylation of zinc pyropheophorbide *a* methyl ester with chlorotrimethylsilane, formation of a novel oxygen-bridged dimer, 6395
phenolic silyl ethers, mild Pd-catalyzed desilylation, 153
phenyl-substituted and alkyl-substituted epoxydisilane, rearrangements to β-trimethylsilylacylsilane and silanols respectively, 5613
phenyldimethylsilyllithium, assay, problems and their resolution arising with the double titration method, 9395
rings and cages containing Si atoms and acetylenic groups, synth of Si-permethylated 1-sila- and 1,6-disila-cyclododeca-3,8-diyne, 1,6-disilabicyclo[4.4.4]tetradeca-3,8,12-triyne,andrelated compds, 1179
$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
silicon tetrachloride and phenol as N^{α}-t-butoxycarbonyl group deprotecting agent in solid

phase peptide synth, 5989
siliranes and vinylsiliranes, synth by [1+2]-cycloadditions of silylene with alkenes and dienes, prep of isonitrile insertion products, the silacyclobutanimines, 3675
2-siloxy-2-alkoxyoxetanes, formation in the photoreaction of cyclic ketene silyl acetals with 2-naphthaldehyde, 5901
2-silyl benzamides, conversion into 2-fluorosilyl-acetophenones by treatment with LDA driven by CIPE-facilitated α-silyl carbanion formation and rearrangement, 2915
silyl enol ethers on polymer support, synth and reaction with imines, 2809
silyl enol ethers, silyl ketene acetals, manganese(III)-salen oxidation to chiral α-hydroxycarbonyl compds, 6531
silyl enol ethers, substitution of acetals, catalyzed by aminium salts, 3483
silyl ethers, 1:1 and 1:2 complexes of TBAF and $BF_3.Et_2O$ as reagents for removal of trialkylsilyl groups from–, 509
silylated enynes, intermolecular and intramolecular carbolithiation of, synth of propargylic-allenes and 4- and 5-membered rings respectively, 6689, 6693
silylation of lithium derivs of chiral phosphine oxides, 7461, 7465
silyloxy-Cope rearrangements of chiral aldol adducts, 4471
2-silyloxycyclopentenecarboxylates, addition of Grignard reagents to, synth of 5-substituted-2-hydroxycyclopentanecarboxylates after desilylation, 6323
spirocyclic siloxanes, intramolecular hydrosilation, diastereoselection, sources of Si-based Lewis acids, 827
(*Z*)-1-substituted-5-silyl-4-penten-1-ols, *p*-toluenesulfonic acid catalysed cyclisation of, synth of 2,5-disubstituted tetrahydrofurans, 487
TMS-Cl and TMS-CN, Lewis acidity of toward an α,β-unsaturated aldehyde: importance in organocuprate 1,4-additions to enones: *ab initio* study, 8471
trialkylchlorosilanes with $B(OTf)_3$ form "supersilylating agents", potent reagents for allylsilane/aldehyde additions and Mukaiyama aldol reactions, 9401
triethylsilane for reduction of hydroxymethyl to methyl groups on *N*-Fmoc-protected amine groups, 263
triisopropylsilanol, new type of phase transfer catalyst for dehydrohalogenation, 2561
trimethylsilyl cyanide in Ritter reactions, conversion of alcohols to their corresponding formamides, 8129
3- and 2-(trimethylsilyl)allyl alcohols, cathodic coupling of ketones with, synth of trimethylsilyl substituted 1,3-diols and homoallylic alcohols respectively, 6737
trimethylsilyldiazomethane for conversion of maleic anhydride moiety of cornexistin into diester, 1967
1-[(2-trimethylsilyl)ethoxy]ethyl group as protecting group for hydroxyl groups, synth from an alcohol and 2-(trimethylsilyl)ethyl vinyl ether, 3647
trimethylsilylketene, reaction with acyl isocyanates, generation of 4-silyloxy-1,3-oxazin-6-ones and reaction with acetylenic esters and enamines, synth of 2-pyridones, 4973, 4977
trisilanes, intramolecular addition to carbon-carbon double bonds, synth of 3-(disilanylmethyl)-2-silatetrahydrofuran derivs which could be converted to polyols including a precursor to (−)-avenaciolide, 8887
vinyl- and allyl-silane containing α-silyl-amines and -amides, oxidative Mannich cyclisations of, 571
vinylsilanes, Sn/Si exchange using Bu_3SnCl/KF, 1921
zirconocyclization of diallylsilanes, synth of chiral silacyclopentanes, 3109

Silicon heterocycles

2-azonia-1-silaindanes, solvent and counterion effects on siliconium ion formation with η^5-Si bonded to a second NMe_2 group, 845
1,3-diisopropyl- and 1,3-ditertiobutyl-2,2,4,4-tetramethylcyclodisilazanes, flash vacuum thermolysis of, 3317
intramolecular hydrosilation forming spirocyclic siloxolanes, sources of Si-based Lewis acids, 827

Silver and compds

Ag(I) complexes of polyaza macrocycles containing the piperazine ring as a semi-flexible moiety, 7111
fullerene (C_{60})-Ag^+ interactions inducing a solution colour change, 7091
Ag^+ selective receptors, 2,8,14-trithio[15]-*m*- and *p*-phenylene crownophanes, 3495

Solid state reactions

rearrangement of 9,10-dihydro-9,10-ethenoanthracene derivs by triplet sensitization from amino-ketone cations in solid state, 6037

Solid-supported reactions

N-alkylcarbamate oligomers, solid-phase synth,

5653
3-aminothiophenes and 2-methylene-2,3-dihydrothiazoles, synth on solid support, 6213, corrig. 7865
benzimidazoles, synth on solid support, 4887
1,3-dialkylquinazoline-2,4-diones, synth on solid support, 4439
condensation of resin bound 3-hydroxyacetophenone with aryl aldehydes followed by reaction with azomethine ylid, synth of pyrrolidines, 9157
construction of an amino alcohol library by parallel synth based on Mannich-type three-component reactions of aldehydes, amines and polymer-supported silyl enol ethers followed by cleavage from the supports, 7783
conversion of epoxides to the corresponding β-halohydrins with lithium halides supported on silica gel in dry media, 1845
coupling reactions of aryl zinc bromides to aryl bromides bound to a polystyrene resin, liberation of the biaryl carboxylic ester by transesterification, 5491
cyclopropanation of unsaturated peptoids on solid support, generation of libraries of constrained cyclic peptoids, 6247
Fmoc-based solid-phase synth using Dpr(Phoc) linker, synth of a *C*-terminal proline peptide, 9195
α-hydroxyphosphonates, synth on Wang resin, 6073
indoles, synth on solid support, 4869
inverse electron demand Diels-Alder reactions of polymer-supported 1,2,4,5-tetrazines, synth of functionalised 1,2-diazines bearing a sulfur-based leaving group, 8151
microwave-assisted palladium-catalysed coupling of aryl and heteroaryl boronic acids with iodo- and bromo-substituted benzoic acids anchored to TentaGel S RAM, 8219
monitoring of by magic angle spinning NMR, 4771
PEG-supported Burgess reagent for cyclodehydration of β-hydroxy amides and thioamides, synth of oxazolines and thiazolines, 4659
phosphorodithioate RNA, synth by H-phosphonothioate method on polystyrene, tentagel, or CPG, 4451
Pictet-Spengler reaction of Merrifield resin-bound tryptophan with aldehydes, synth of tetrahydro-β-carbolines, 3963, 5041, 5631
polymer-bound aromatic bromides, amination with primary and secondary alkyl- and arylamines, synth of arylamine products after cleavage from the support, 6993
putative β-turn mimetics incorporating the i+1, i+2 and i+3 sidechains, synth on a solid-support of guanidine resin which also acts as a general base catalyst, 6961
$Sc(OTf)_3$-catalysed aldol reactions of polymer-supported silyl enol ethers with aldehydes, prep of 1,3-diol, β-hydroxy carboxylic acid and β-hydroxy aldehyde libraries, 5569
S_NAr reaction on solid support monitored by gel-phase ^{19}F and MAS ^{19}F and ^{13}C NMR, 4667
solid phase approach to quinolones using the DIVERSOMER® technology, 4815
solid phase oligosaccharide synth using trichloroacetimidates as sugar donors, 3989
solid phase peptide synth, incorporation of (*S*)-α-methylmethionine, (*S*)-α-methylleucine, 2-aminoisobutyric acid and (*S*)-α-methylphenylalanine into a peptide sequence, 6713
solid phase reductive alkylation of secondary amines using borane-pyridine complex (BAP), 4819
solid phase ring-closing metathesis in a cyclisation/cleavage strategy, synth of a seven membered cycloolefin, 8249
solid phase synth of 5-alkoxyhydantoin libraries with a three-fold functional diversity, 5835
solid phase synth of α-amino phosphonates and phosphonic acids by condensation of imines with Wang resin bound H-phosphonates, 5457
solid phase synth of chiral 3-substituted quinazoline-2,4-diones starting from *N*-urethane anthranilamides, 7031
solid phase synth of a diketopiperazine catalyst containing the amino acid (*S*)-norarginine, 5839
solid phase synth of peptides containing L-phenylalanine derivs substituted with vicinal tricarbonyl moieties, 8475, 8479
solid phase synth of peptidoglycan monomers by coupling of the corresponding lipid-bearing glycocarboxylic acids to resin bound peptides, 8097
solid phase synth of pyridines and pyrido[2,3-*d*]-pyrimidines suitable for combinatorial libraries, 4643
solid and solution phase synth of chiral β-sulfonopeptides using sulfonyl chlorides derived from enantiomerically pure 2-substituted taurines under mild coupling conditions, 8589
solid-phase peptide synth using 4-carboxyphenylalanine and 4-methoxycarbonylphenylalanine

derivs, 6661
solid-phase phosphopeptide synth using bis-(polyfluorophenyl)chlorophosphates, prep of serine-threonine protein phosphatase substrates, 8227
solid-phase synth of 1,4-benzodiazepine-2,5-diones using polymer supported amino acids and *o*-nitrobenzoic acids or protected anthranilic acids, 8081
solid-phase synth of bis-ureas from oxime resin-derived carbamates of diisocyanates by sequential amine addition, 8141
synth of an *o*-nitrobenzyl photolabile linker, 5751
synth of thiol esters from thiols and carboxylic acids using ethyl 3-(dimethylamino)propyl carbodiimide on a solid support, 4305
tetrahydroisoquinolines and tetrahydroimidazo-[4,5-*c*]pyridines, synth on –, 4865
TSK gel for solid-phase synth of polyamide nucleic acid analogues and PNA-DNA conjugates, 3571
see also Polymer support

Solid-supported reagents
aryl bromides bound to a polystyrene resin, coupling reactions with aryl zinc bromides, liberation of the biaryl carboxylic ester by transesterification, 5491
teicoplanin aglycone as a molecular scaffold for solid phase synth of combinatorial libraries, 6319

Solvents and solvent effects
influence of solvent on diastereoselectivity of synth of *trans*- and *cis*-3-hydroxy-2-(4-methoxyphenyl)-2,3-dihydro-1,5-benzothiazepin-4(5*H*)-one, 6413
water, reaction of 7-chloro-1-cyclopropyl-6-fluoro-4-oxo-1,2-dihydroquinoline-3-carboxylic acid with piperazine in water, synth of ciprofloxacin and norfloxacin antibiotics, 6785
aqueous media containing glycosidic surfactants or amphiphilic carbohydrates for reduction of carbonyl compds, 53
2-azonia-1-silaindanes, solvent and counterion effects on siliconium ion formation with η^5-Si bonded to a second NMe_2 group, 845
bathochromic shifts of push-pull 5,5′-disubstituted 3,3′-dihexyl-2,2′-dithiophenes, 1617
C-H acidity effect of guest molecules on complexation with monomethyl ether of monodeoxycalix[4]arene, 1435
deconjugation and anion reactions of $\alpha\beta$-unsaturated esters and amides, stereochemistry, role of base and –, 5261
deuterium exchange in aromatic hydrocarbons and heterocycles using supercritical D_2O/NaOD, 3445
differential hydration of *E*- and *Z*- conformers of t-butylformamide by intermolecular ^{13}C-^1H nOe, 6569
dimethoxyethane as solvent in addition of metalated sulfone to aldehydes and ketones, Julia olefination, 5283
effect of water on photoinduced electron transfer reactions of α,β-epoxy ketones with 2-phenyl-*N,N*-dimethylbenzimidazoline, synth of corresponding aldols, 7079
effects on regioselective intramolecular photocycloaddition of 1-cyano-2-(2-oxa-4-alkenyl)-naphthalenes in the presence of Eu(III) salt, 7775
gem-allyl dianion synthon in water; reaction of carbonyl compds with 1,3-dibromopropene mediated by indium in water, 295
intramolecular cyclization of halo-alkene group to alkene in acetonitrile-water, influence of solvent on regioselectivity, 2003
Michael addition of nitroalkanes to conjugated enones in water, cetyltrimethylammonium chloride as surfactant promoter, 8027
on Michael addition of thiols and amines to 3(2*H*)-thiophenone 1,1-dioxide, synth of the corresponding vinyl sulfides and enamines, 119
Mn-salen catalysed asymmetric oxidation of enol derivs with iodosylbenzene as a terminal oxidant, 4389
prep of α-hydroxyphosphonates using natural phosphate, natural phosphate doped with potassium fluoride and sodium phosphate dodecahydrate without solvents, 3999
regioselective control in PET-oxidative cyclisation of unsaturated silyl enol ethers by solvent effects, 7349
solid-phase synth of peptides with tripodal side-chain bridges, optimisation of the solvent conditions for solid-phase cyclisations, 2173
solvent dependency of reaction between phosphinic acid and trimethyl orthoformate, synth of phosphinate esters, 425
solvent and polar substituent effects on the kinetics of radical reactions with thiols, 5845
solvent-induced control of ultrasonic deuterium labelling, 6231
stereoselectivity of ene reaction of allylic alcohols with singlet oxygen, 7159
supercritical CO_2, asymmetric hydrogenation of

αβ-unsaturated carboxylic acids in, 2813
ytterbium catalysed Michael additions of β-keto-esters in water, 1879
zinc-mediated allylation of benzyloxime of glyoxylic acid and derivs in aqueous media, synth of α-allyl α-aminoacids, 5273

Solvolysis
of[3-^{13}C]-3,4-dimethyl-4-homoadamantyl *p*-nitrobenzoate, comparison of the barriers to Wagner-Meerwein rearrangement of the secondary and tertiary 4-homoadamantyl cations, 1035
solvation effects on the tautomerisation of *N,N*-dimethylvaline, 6673
of 2-thioxo bridgehead compds as compared with their 2-oxo homologues, evidence for marked π-conjugation in 2-thioxo carbocation, 2241
variation of coplanarity between aryl ring and cationic centre at transition state: kinetic results and *ab initio* calculations, 4173

Sonochemistry
in Fries rearrangements mediated by $ZrCl_4$ 7659
homologation of carboxylic acids under ultrasonic radiation, 1781
ketene acetals and dithioacetals by elimination from β-haloacetals using base and PT catalyst, comparison of yields using microwave and ultrasound activation, 1695
reaction of 1,2-diamines with hexachloroacetone, 5265
sonochemical Barbier-type reaction of aryl bromide, magnesium powder, 1,2-dibromoethane and bis(tributyltin)oxide, synth of arylstannane, 495
sonochemical coupling between alkynyl halides and copper sulfinates, synth of alkynyl sulfones, 3717
ultrasonic deuterium labelling in various solvents, 6231

Spiro compds
AB-spiroacetal subunit of spongistatin 1 (altohyrtin A), synth from 3-benzyloxypropanal, 8581
2-alkylidene 1,6-dioxa-spiro[4.4]non-3-ene and 1,6-dioxa-spiro[4.5]dec-3-ene derivs, synth by $CuSO_4$-promoted spirocyclization, 893
1-azaspiro[4.4]non-6-ene synth by Pd-catalysed spirocyclization in approach to cephalotaxine, 5253
barbituric acid-5-spiro-4-quinazoline system, synth, 3849
cyclopentenone spiro-annulation to cyclic ketones, synth of intermediate to acorone, 1683
dienyl spiro-cyclopropanes, rearrangement to vinyl spiro-cyclopentenes, 3565
1,7-dioxaspiro[5.5]undecane alcohols, regio- and stereo-selective reductive cleavage, 5649
1,8-dioxa- and 1-oxa-8-thia-spiro[4.5]decanes, stereocontrolled synth involving PhS migration, 4581
exo-methylene 5/6 and 5/12-17 membered spiro- and bridged-ring heterocycles, synth by cascade hydrostannylation of terminal alkynes in α,ω-enynes followed by bis-cyclisation and Stille coupling, 4413
8-hydroxy-1-(spiro-1'-indan)benzazepines, synth utilizing the thiomethyl group to activate the aromatic ring system, 7345
(+)-isonitramine, spirocyclic alkaloid from plants of *Nitraria* genus, asymmetric synth by "triple allylic strain-controlled" intramolecular lactam enolate S_N2' alkylation, 1433
(±)-lubiminol, spirovetivane (spiro[5.4]decane system) phytoalexin, synth by rearrangement of cyclobutyl carbinyl precursor, 8703
2-methoxycarbonylmethylene-1,6-dioxaspiro[4.5]decane and -1,7-dioxaspiro[5.5]undecane, synth by intramolecular conjugate addition of hemiacetal alkoxides to alkynoates, 5707
5-oxaspiro[2,4]hept-4-ones, formation by intramolecular photocycloaddition of cyclopropene carboxylic acid allylic esters, 8879
4-phenylsulfonyl-1,6-dioxaspiro[4,5]decan-10-ones, Na/Hg reductive rearrangement to 5-hydroxy-1,6-dioxadecalins, 3179
pinnaic and tauropinnaic acids with 6-azaspiro-[4.5]decane system isolated from mollusc, 3871
pinnatoxin A and D, macrocyclic toxins isolated from *Pinna muricata*, isolation and structure, 4023, 4027
spiro[2,5]octa-1,4-dien-3-ones, photolysis of, reversible biradical formation and biradical-olefin cycloaddition, 5853
spiro-1,3-dioxazoles, synth by 1,3-dipolar cycloaddition of nitrile-*N*-oxides with 3,5-di-t-butyl-1,2-benzoquinone, 5623
3-spiro-2-oxindoles and 3-spiro-2(3*H*)-benzofuranones, synth by reaction of 2-halophenols and -anilines with vinyl halides or triflates, 695
spiro-ethers, -ketals, *via* photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones, 3521
spiro-fused pyrrolidinones by generation of azomethine ylids, imidate methylids and thioimidate methylids in the presence of electron deficient dipolarophiles, 5163
spirochlorin, formation by reaction of bromovinylporphyrin with tetracyanoethylene, 5931

spirocyclic ammonium ylid intermediates in prep of azacyclooctene and azacyclononene containing substrates, 2165
spirocyclic sulfides, synth using phenylthio migration, 707
spiro[cyclopentane-1,1′-indan]-2,5-dione system, valuable in synth of fredericamycin A, synth by rearrangement of the *trans*-α,β-epoxy acylates in tetrahydrobenz[*e*]indan systems, 1817
spirocyclopropane sugars, synth and application to formation of tertiary chiral centres: route to 2,2′-dialkylated pyranose subunit of lasonolide A, 8617
spiroindoline imides, synth by photocyclisation of enaminoesters and subsequent transformation into precursors of *Aspidosperma* alkaloids, 37
6,6-spiroketal system of reveromycin A, synth and absolute configuration at C_{11},C_{12},C_{15}, C_{18} and C_{19}, 6755
spirolides E and F from the digestive glands of shellfish, identification of the spirolide pharmacophore, 7671
spiropyrans by photoirradiation of MeOH/C_6H_6 solution of 3-cycloalkenyloxy chromone, 8913
(±)-strobilurin E, spirocyclic diacetal, synth, 7955
1,6,8-trioxadispiro[4.1.5.3]pentadecanes, synth from D-galactopyranose involving intramolecular hydrogen abstraction reactions promoted by alkoxy radicals, 6021
cis- and *trans*-1,7,9-trioxadispiro[5.1.5.3]hexadecane, synth, stability and solution structures, 5461, 5465
zooxanthellatoxin A, absolute configuration of spiroacetal portion, 7267

Squalene
isodehydrothyrsiferol and 10-epidehydrothyrsiferol, polyether squalene derivs from red alga *Laurencia viridis*, structures, 2671
C_{20} 2,3-oxido– analog, conversion by lanosterol synthase into tricyclic products with 5-membered C-ring, 2709

Squaric acid and derivs
see Oxocarbon acids and derivs

Staudinger reactions
two-step – for synth of 3-phthalimido β-lactams, 4409

Stereochemistry
absolute – of keramaphidin B, manzamine-related alkaloid from sponge *Amphimedon* sp., 8203
absolute – of penaresidins A and B, 6775
absolute – of YM-47522, antifungal antibiotic, 6711
of batzelladines A and D, guanidine alkaloids from Caribbean sponge *Batzella* sp., 6977
of cepaciamide A, a fungitoxic compd from *Pseudomonas cepacia* D-202, 1039
effect of nature of the dienophile on stereochemical outcome of heterocycloaddition of (*S*)-(+)-3-*p*-tolylsulfinylbut-3-en-2-one with various electron-rich dienophiles, 3687
of hydrogen migration from C-24 to C-25 during biomethylation in ergosterol biosynth, 1339
loss of stereochemical integrity at a neighbouring quaternary carbon during oxidation of highly substituted cyclohexanol, 1721
phorboxazoles A, B, absolute configuration, – at C-43, 7879
putative β-turn mimetics incorporating the i+1, i+2 and i+3 sidechains, synth on a solid-support of guanidine resin which also acts as a general base catalyst, 6961
relative – of pinnatoxin A, a macrocyclic toxin isolated from *Pinna muricata*, 4023
stereochemical control in Claisen rearrangement of allylic esters mediated by silyl triflate, stereochemical control in, 3005
synth of "skip" 1,3-dimethyl stereocenters *via* aldol reaction followed by hydrogenation and deoxygenation of hydroxyl group, synth of 4,6-dimethyl-2-octenoic acid, 1331
of tautomycetin, antifungal compd from *Streptomyces griseochromogenes*, 491
of bis-TBDPS protected aryl *C*-olivosides, unusual stereochemistry of glycosides when the C3 and C4 hydroxyls are protected by an extremely bulky group, 663

Stereoselection
cyclopropanation of monosubstituted ethenes by methyl phenyldiazoacetate catalyzed by dirhodium prolinates, 4133
effect of the anchoring sites of the spacer and the reaction temperature on regio- and stereoselectivity of glycosylation of several template linked monosaccharides, 1105
enhancement of facial selectivity of a plane nonsymmetric double bond of 2,3-dioxa and 2,3-oxaza bicyclo[2.2.2]oct-5-enes by introduction of a methoxycarbonyl group, 517
importance of entropy in stereoselection for reduction of t-butylcyclohexanone by lithium aluminium hydride, 2185
reversal of – in diastereodivergence of *meso*-dicarboxylic anhydrides, 9237
reversal of facial selectivity in the Sharpless

asymmetric dihydroxylation of a sterically hindered 3-methylidene-benzofuran, 1375
stereoselectivity of addition reactions of carbon nucleophiles to chiral (E)-nitroalkenes bearing a γ-stereocenter, 3055
stereoselectivity of the reactions of *N*-phthaloyl iminium ions and amino-substituted radicals derived from threonine, 2569
see also Diastereoselection

Steric and strain effects
activation barrier for the nucleophilic attack of CN^- on [1.1.1]-propellane compared to total strain energy released, 5573
bicyclo[1.1.1]pent-1-yl, tertiary alkyl radical with enhanced reactivity, photogeneration from corresponding diacyl peroxide, 8059
1,2,3-cyclooctatriene, generation and trapping, strain calculations, 4907
5-diazotricyclo[5.1.0.$0^{1,3}$]hexan-4-one, a two-carbon bridged spiropentane, Wolff photorearrangement at 15 K and photolysis under various other conditions, 8285
non-planar *meso*-tetraphenyl porphyrins with progressive ethyl substitution on pyrrole rings, UV/vis spectra, crystal structures, 1183
pristinamycin I_A, cyclic depsipeptide, electrochemical reduction, effect of macrocycle ring-opening, 7499
radical fragmentation of 8-methylenetricyclo-[3.3.0.$0^{3,7}$]octan-2-ol/2-one9-methylenetricyclo-[4.3.0.$0^{3,8}$]nonan-2-one, using $(Me_3Si)_3Si^·$, 7867
reaction of sulfenamides with singlet oxygen, steric and electronic effects on partitioning of persulfinyl intermediate between quenching and chemical reaction products, 6093
steric effects in enyne-allene thermolyses, switch from the Myers-Saito reaction to the C^2-C^6-cyclisation and DNA strand cleavage, 7691
steric effects in reactions of aldehydes with enol diisopinocampheylborinates of methyl ketones, 4911
steric and electronic effects on isomerisation of electron deficient vinylcyclopropanes by pentacarbonyl iron, 357
steric hindrance in corticosteroid system enabling synthesis of 17α-acetate, 8403
steric parameters for amines estimated by MOPAC, application to adrenergic blocking activity of β-haloalkylamines, 4617
Wagner-Meerwein rearrangements in cyclizations of 9-(keto-cycloalkylmethyl)fluorenes, 1535

Steroids and sterols
2-fluoromethyl- and 2-hydroxymethyl-4-alkyl furans connected at their 4-position to a steroid at C-17, synth from α-alkyl acroleins and 1-bromo-1-trimethylsilylethylene *via* allene oxides, 7437
3β-acetoxy-Δ-^{5}-unsaturated steroids, β-epoxidation with potassium permanganate-metal sulfates and nitrates, 687
C9α-alkylated and C7-C9 propano-bridged equilin derivatives, synth from equilins involving oxy-Cope rearrangement, 6103
C6-C7 methylene-bridged derivs of estradiol, synth from 3-methoxyestra-1,3,5(10),6-tetraene derivs by Michael-type addition reactions involving dimethylsulfoxonium methylide, 1771
3-carboxyl unsaturated steroids, synth from steroid 3-ketones *via* 3-enol sulfonates using 3-oxa-octafluoropentanosulfonyl fluoride, 8553
cholestane glycosides from *Ornithogalum saundersiae*, cytostatic activity, 1245
cholesterol absorption inhibitors, synth of 3-unsubstituted β-lactams by asymmetric Reformatsky reaction, 4095
cholesterol, methyl 3α,12α-diacetoxy-7α-hydroxy-5β-cholanate, formation of methyl pheophorbide-*a* esters, NMR, 4945
corticoid synth from 9α-hydroxyandrost-4-ene-3,17-dione *via* an allene, 3417
dexamethasone, reaction with DMF-DMA, unusual reaction in which C(17)OH-$COCH_2OH$ is replaced by C(17)H-$COCO_2H$, 5365
AB-diaromatic 14-methyl steroids in Pakistani oil seeps, occurrence, synthesis, biochemical origin, 2837
dihydro-B-nortestosterone and its 17α-methyl deriv, synth by olefin reduction using borane and diimide, 6221
dihydrocortisone, conversion into wortmannin, PI 3-kinase inhibitor, 6141
enzymic ring C secosteroid synth from gorgosterol, cholesterol, stigmasterol and progesterone using *Pseudopterogorgia americana* acetone extract, 8301
ergosterol biosynth, stereochemistry of hydrogen migration from C-24 to C-25 during biomethylation in biosynth, 1339
(+)-estrone, estrogenic steroid hormone, synth from racemic 4-t-butoxy-2-cyclopentenone, 7403
estrone as starting material for an estradiol derived enyne, a potential antitumour compd, 3395
geodisterol, marine polyoxygenated sterol with an aromatic A ring from *Geodia* sp., structure,

8145
3-hydroxypregnane-2,16-dione, 2-hydroxyandrosta-1,4-diene-3,16-dione, from wood, 7875
incrustasterol A and B, cytotoxic polyoxygenated steroids from marine sponge *Dysidea incrustans*, synth, 4775
(±)-4α-methyl-5α-D-homoandrostane-3,17a-dione, synth by radical route, 7909
oligonucleotides with cholesteryl groups tethered near to one or both termini, binding to liposomes, informational liposomes, 6243
oxidation of steroidal olefins to enones using $RuCl_3$/t-BuOOH, 3429
pectinoacetal-related sterols with cancer cell antiproliferative properties, isolation from gorgonian *Ctenocella* sp., structure, 2959
pentacyclic – with six-membered E-ring, synth by Stille vinylation and Diels-Alder reaction, 2085
phytosterol biosynthesis, isotope effects in forming 24-alkene isomers, 24(28)-methylene cycloartanol and cyclosadol formed by different sterol methyl transferase enzymes, 6823
12(13→18)-*abeo*-pregnane by base-catalysed rearrangement of 12,18-cyclopregnane-11,20-dione, 929
protosterol cation, the inhibition of lanosterol synthase by a tetracyclic ammonium ion, a structural analogue of the protosterol cation, indicates that the cation is not strongly bound by the enzyme, 3287
pyrido-fused steroidal D-ring and functionalised pyridine, synth from conjugated oximes under Vilsmeier conditions, 8231
ritterazine A, a cytotoxic dimeric steroid from the tunicate *Ritterella tokioka*, determination of orientation of the steroidal units by ^{15}N-HMBC NMR, 1447
steroidal enamides, nitration by acetyl nitrate 2079
steroidal olefins, convenient epoxidation using chloral hydrate/H_2O_2, 8349
steroidal quinols and *syn*-epoxyquinols by *m*-CPBA oxidation of phenols, 3765
16-unsaturated corticosteroids, route *via* selective acetylation of 17α-OH, 8403
Δ^{22}-unsaturated steroids by Ramberg-Bäcklund rearrangement of chlorosulfones formed from a cyclopregnane-20-thiomethanol deriv, 29

Stille reactions
synth and use of 17-vinylsteroids, 2085

Strain effects
see Steric and strain effects

Structure activity
see Linear free energy relations

Substituent effects
acetamido anion substituents as activating groups in nucleophilic heteroaromatic substitution of halide by alkoxide in pyridazines, phthalazines, thiazole and thiadiazoles, 4065
effect of amide group of 2-acyl-*N,N*-dialkylnaphthamides on additions to, 5577
enhancement of facial selectivity of a plane nonsymmetric double bond of 2,3-dioxa and 2,3-oxaza bicyclo[2.2.2]oct-5-enes by introduction of a methoxycarbonyl group, 517
on facial selectivity of benzobicyclo[2.2.2]octatrienes bearing an electron-withdrawing group on one of the olefin moieties toward oxidative electrophiles, 2609
gem-dicarboalkoxy effect for intramolecular dipolar cycloaddition of 3-substituted 5-hexenyl nitrile oxides, 451
anti-homoallyl alcohols from reaction between *cis*-2-alkenyltins and aldehydes when the substituent at the 2-position of the alkenyltin reagent was bulky, 3701
on lithiation of substituted 2-n-alkyl *N,N*-diethylbenzamides, synth of a mixture of *ortho*- and adjacent-benzylic alkylated products, 1335
metallochlorins, – in OsO_4 dihydroxylation, bacterio- and isobacterio-chlorin synth, 3781
phenyl substitution effects on rate acceleration of cation radical deazetation of 2,3-diazabicyclo-[2.2.2]oct-2-enes, 4377
polar substituent and solvent effects on the kinetics of radical reactions with thiols, 5845
reagent-controlled diastereoselectivity in aziridination of alkenes by chiral 3-acetoxyamino-3,4-dihydroquinazolin-4-ones, 1′-(t-butyldimethylsilyloxy)ethyl as the chiral 2-substituent on the quinazolinone, 5179
remote substituent control of regioselectivity of arylation of 2-*exo*-cyano-7-oxabicyclo[2.2.1]-hept-5-en-2-*endo*-yl acetate and 7-oxabicyclo-[2.2.1]hept-5-en-2-one, 2225
on ring expansion reactions of conformationally-restricted 2-alkenylcyclopropylcarbene-chromium complexes to 5-alkenyl-2-cyclopentenones, 1359
six-bond – in 6,7-dinitroquinoxalinedione, evidence from N-14 and O-17 NMR, 3191
in synth of *N*-aminopyrroles and pyridazines by cyclisation of 4,4-dichloro-1-ethoxycarbonyl-3-phenyl-1,2-diazabutadiene with an electron-rich

olefin, 1351

Substitution

acetamido anion substituents as activating groups in nucleophilic heteroaromatic substitution of halide by alkoxide in pyridazines, phthalazines, thiazole and thiadiazoles, 4065

allylic − with lithium cobalt-bisdicarbollide as catalyst, 8707

alternating addition of carbon-centred radicals to unsaturated systems, novel homolytic aromatic substitutions, 7425

boron-iodine(III) exchange in reaction of (diacetoxyiodo)arenes with tetraarylborates in AcOH, synth of diaryliodonium tetraarylborates, 8421

cine − in coupling of a dihydronaphthalene stannane with aryl iodides, evidence for intermediate Pd(0) carbenes, 6997

Cl replacement by alkyl, alkenyl, dioxanyl, benzyl, ... in trichloroethylene, trichloro-1,3,5-triazine, dichloromaleic anhydride, chloranil, hexachlorobutadiene, by radical chain processes, 6897

consecutive $S_{RN}1$ reactions of 2,3-bis(chloromethyl)-1,4-naphthoquinone with 2-nitropropane leading to the bis-*C*-alkylation product, 3323

of *N,N*-dimethylamino α,α-difluoroketones with tetramethylammonium salts of imidazole, synth of 5-imidazol-1-yl α,α-difluoroketones, 5119

m-dinitrobenzene, photo-substitution with C-nucleophiles in presence of TBAF, 7591

enantioselective allylic − of 1,3-diphenyl-2-propenyl acetate using the sodium salt of dimethyl malonate and (phosphino-1,3-oxazine)palladium catalyst, 9143

intramolecular nucleophilic aromatic substitution, key step in synth of M(2-4) macrocyclic subunit of orienticin C from a tetrapeptide presursor, 3251

NO_2/alkyl substitution reaction between 2-aryl-1-nitro-1-alkenes and trialkylgallium compds, 3347

nucleophilic − in benzylic phosphonothioic dichlorides, formation of a diamide without intervention of the amidic chloride, 8247

nucleophilic − of tricarbonyl(2,4,6-trimethylphenyl-2-methoxybenzoate)-chromium complexes with aryl Grignard reagents, synth of axially chiral biaryls, 6359

nucleophilic aromatic substitution of (η^6-fluoroarene)tricarbonylchromium complexes, synth of arylpiperazines, 8487

nucleophilic aromatic substitution reaction as key step in synth of 3-(4-pyridinylamino)-1,2-benzisoxazoles, 995

nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, synth of urethano-, amido- and sulfonamido-[60]fullerenes, 4683

nucleophilic substitutions of the sulfonates of α-trifluoromethylated alcohols, 8187

palladium-catalysed nucleophilic substitutions, effect of silicon group on reactivity of carbonate and acetate, 8483

Pd-catalyzed alkyl-dechlorinations of chloroquinazolines using trialkylalanes as alkyl source, 1309

$TiCl_4$-promoted S_N'-replacement of 6-methoxy group for 4-(dimethoxycarbonylmethyl) in 6-methoxy-1-methoxycarbonyl-1,2,3,4-tetrahydro pyridines, 5715, corrig. 8063

protection, metalation and electrophilic substitution of 5-methyl tetrazole, synth of 5-substituted tetrazoles, 3651

radical-induced S_N1 substitution reactions, 4365

regioselective − of fluorine in fluorobenzenes, synth of aryl alkyl ethers, 6439

S_NAr reaction on solid support monitored by gel-phase ^{19}F and MAS ^{19}F and ^{13}C NMR, 4667

$S_{RN}1$ reactions in synth of macrocyclic bis(1,4-naphthalene disulfide) derivs, 1603

tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions of olefinic esters, synth of 1-hydroxybicyclo[n.1.0]alkanes, 1849, corrig. 6959

triarylpyrylium salt promoted substitution reactions of dimethyl acetals with silylated nucleophiles, 7779

"triple allylic strain-controlled" intramolecular lactam enolate S_N2' alkylation for asymmetric synth of (+)-isonitramine, 1433

vinylic substitution reactions of α-haloenyne sulfones with sodium alkoxides, synth of (*E*)-α-alkoxyenyne sulfones, 7381

Sulfamides

2-chloroethyl nitrososulfamides, convenient synth from *N*-(3-sulfamoyloxazolidin-2-ones, 5695

dibenzylidene sulfamides, intramolecular coupling, synth of 1,2,5-thiadiazolidine 1,1-dioxides and 1,2-diaryl ethylenediamines, 2859

Sulfanes

alkylsulfanyl (SMe, SEt and SCH_2Ph) and sulfanyl (SH) migration in the synth of substituted tetrahydrofurans, 4823

Sulfenic acids and derivs

sulfenamides, reaction with singlet oxygen, steric

and electronic effects on partitioning of persulfinyl intermediate between quenching and chemical reaction products, 6093
sulfenate esters as trapping reagents for perepoxide intermediate formed in the photooxidation of adamantylideneadamantane, 2911
sulfenyl chlorides, synth by reaction of sulfenate esters with acyl chlorides, trapping with alkenes, 679
thiosulfinate esters (RSO.SR'), reaction with sulfenate esters and sulfenyl chlorides, formation of disulfides and sulfinate esters or sulfinyl chlorides, 9101

Sulfides
allyl alkyl –, formation by retro-ene type fragmentation of allylic dithiolcarbonates, 2445
bis(trisubstituted tetrathiafulvalenyl) disulfides, synth by oxidative coupling of TTF thiolates, 5115
by reduction of sulfoxides by HCl in acetonitrile, 4569
cyclic and spirocyclic sulfides, synth using phenylthio migration, 707
α-fluorinated α,α-difunctionalized sulfides and sulfones, synth, 2413
from sulfoxides by abnormal Pummerer cyclisation, 5217
bis-galvinoxyl-disulfide, prep from 11-bromoundecanol and characterisation, 8837
metathetic cyclization of diallyl sulfide to 2,5-dihydrothiophene using Mo alkylidene catalyst, 9373
oxidation of – with t-butyl hydroperoxide catalysed by camphorsulfonic acid, 7129
oxidation of by methyl(trifluoromethyl)dioxirane, involvement of a sulfurane intermediate, 2299
oxidation to sulfones using 2-methylpropanal and dioxygen, 3367
1,2-propadiene-1,3-dithione (carbon disulfide) from flash vacuum pyrolysis of 1,2-dithiole-3-thiones, 4805
unsubstituted and 2-substituted allyl phenyl sulfides, reactions with tris(trimethylsilyl)silane, synth of 2-functionalised allyl tris(trimethylsilyl)silanes and subsequent use as radical-based allylating agents, 6383, 6387, 6391
unsymmetrical dipyrrolyl sulfides bearing electron-withdrawing groups at the α-position, prep, 2891
vinyl sulfides by reaction of perfluoroalkylated dithioketals with phenyllithium, subsequent oxidation and further reaction with phenyllithium yields perfluoroalkylated triphenylethylenes, 5905, corrig. 7665
see also Thioethers, Thiols

Sulfilimines
see Sulfimides

Sulfimides/sulfimines
styryl –, radical addition to, synth of styryl tetrahydrofurans and tetrahydropyrans, 909

Sulfines
see Thiocarbonyl oxides

Sulfinic acids and derivs
copper sulfinates, sonochemical coupling with alkynyl halides, synth of alkynyl sulfones, 3717
oxidative fragmentation of 1-alkenyl sulfoxides using SO_2Cl_2, generation of 1-alkenylsulfinyl chlorides, 2345
(phenylsulfinyl)phenols, prep from aryl phenylsulfinates *via* thia-Fries rearrangement, 7
sulfinate esters as trapping reagents for perepoxide intermediate formed in the photooxidation of adamantylideneadamantane, 2911
thiosulfinate esters (RSO.SR'), reaction with sulfenate esters and sulfenyl chlorides, formation of disulfides and sulfinate esters or sulfinyl chlorides, 9101
N-*p*-toluenesulfinyl benzaldimine, cycloadditions in synth of 2-arylpyrrolines, 5755
(*S*)-(+)-3-*p*-tolylsulfinylbut-3-en-2-one, oxabutadiene for asymmetric cycloaddition of styrenic compds, 3687
trifluoromethanesulfinates,unexpectedformation in triflylation reactions of sterically hindered alcohols and phenols, mechanism, 8359

Sulfinyl compds
N-Cbz α-amino-α-trifluoromethyl-β-*p*-tolylsulfinyl methyl butanoates, Pummerer reactions of, S_N2-type displacement of sulfinyl by hydroxy group to yield α-trifluoromethyl-*allo*-threonine derivs, 6005
dimethyl (*S*)-*p*-tolyl-sulfinylmethylphosphonate, reaction with a suitable Grignard reagent, synth of enantiomerically pure sulfoxides, 6017
ethyl (methylsulfinyl)acetate, reaction with anilines and oxalyl chloride, modified Gassman oxindole synthesis, 4631
2-methyl *N*-(*p*-toluenesulfinyl)aziridine-2-carboxylic acid, ring-opening to give α-methylphenylalanine and α-methyl-β-phenylserine, 5473
cis-2-phenylsulfinylcyclopropanecarboxylate as intermediate in synth of *cis*-2-fluoro-cyclopropane-1-carboxylic acid from t-butyl acrylate and chloromethyl phenyl sulfoxide, 8507

N-sulfinyl imines, diastereofacial selectivity in addition of ester enolates, 3881
N-sulfinylaziridine 2-carboxylic acid, ring-opening of, asymmetric synth of D-*erythro*- and L-*threo*-sphingosine, 4349
(*S*)-(+)-3-*p*-tolylsulfinylbut-3-en-2-one, oxabutadiene for asymmetric cycloaddition of styrenic compds, 3687

Sulfites

cyclic sulfite group as epoxide surrogate in synth of carbocyclic nucleoside, 2353

Sulfonamides

N-allylsulfonamide, Heck arylation of and subsequent hydroformylation, synth of 4-aryl-2,3-dihydropyrroles, 3947
2-amino(sulfonamido)cyclohexanes as ligands for ruthenium catalysed asymmetric transfer hydrogenation of ketones, 8165
– as anchor in resin-bound synthesis, 1145
N-arenesulfonyl *N'*-cyano *N"*-aryl guanidines, synth, 7253
(+)-*trans*-camphenesulfonamide, synth from camphorsulfonamide *via* acid-catalysed rearrangement of the corresponding carbinol, 3267
N-desulfonylation of *N*-acyl alkene and arenesulfonamides using Bu_3SnH/AIBN, 1667
N,N-diallyl tosylamides, synth of 3,4-disubstituted *N*-tosylpyrrolidines by radical addition/cyclization of PhSeTs, 1229
peptidosulfonamide peptidomimetics, synthetic receptors based on, synth and binding selectivity against a tripeptide library, 8253
p-toluenesulfonamide, alkylation by Mitsunobu reactions, 2457
urethano-, amido- and sulfonamido-[60]fullerenes by nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, 4683
(*E*)-vinylsulfonamides, synth by selective bond cleavage of 4-silyl-substituted 1,2-thiazetidine 1,1-dioxides with $EtAlCl_2$, 2257

Sulfones

2-alkenyl-2-methoxycyclopropyl phenyl sulfones, conversion into alkenyl and unsymmetrical dialkenyl ketones, 9305
alkylation of cyanomethyl –, new reagents to effect Mitsunobu reactions, 2459
alkynyl sulfones, synth *via* sonochemical coupling between alkynyl halides and copper sulfinates, 3717
alkynyl trifluoromethyl –, radical alkynylation using, mechanistic and labelling study, 5269
allyl and 2-functionalised allyl phenyl sulfones, radical-based allylation of mediated by tris(trimethylsilyl)silane, 6383, 6387, 6391
by oxidation of sulfides using 2-methylpropanal and dioxygen, 3367
α-carbamoyloxy-β,β-difluoroethenyl phenyl sulfone, prep and reactivity of, 8233
chlorosulfones formed from a cyclopregnane-20-thiomethanol deriv, Ramberg-Bäcklund rearrangement of, synth of Δ^{22}-unsaturated steroids, 29
dilithiated (*E*)-*N*-isobutyl-4-tosyl-2-butenamide, allyl sulfone dianion for the regiospecific γ-functionalisation of crotonamide dianion, synth, 4787
dipropargylic sulfones, modified Ramberg-Bäcklund reaction of, synth of (*E*)- and (*Z*)-hex-3-ene-1,5-diynes, 1049
enynyl –, radical addition of $TolSO_2SePh$, synth of 1,4-di(arenesulfonyl)-1,3-butadiene, 4161
α-fluorinated α,α-difunctionalized sulfides and sulfones, synth, 2413
from oxidation of sulfides by methyl(trifluoromethyl)dioxirane, involvement of a sulfurane intermediate, 2299
α-haloenyne sulfones, vinylic substitution with sodium alkoxides, synth of (*E*)-α-alkoxyenyne sulfones, 7381
intramolecular cyclizations of some 3-arenesulfonyl cycloalkanol derivs, 6827
N-isopropyl-5-tosyl-4-pentenamide, precursor to δ-acyldienyl anion equivalent, synth of 6-hydroxy-2,4-dienamides, 2833
Julia-Lythgoe olefin synth from ketones, requirement for SmI_2, 2085
α-metalated –, reaction with aldehydes and ketones, beneficial effect of 1,2-dimethoxyethane, 5283
methoxyethoxymethyl 2-benzenesulfonyl-2-tributylstannylcyclopropyl ether, conversion into 3-acylfurans, 4585
γ-oxygenated-α,β-unsaturated sulfones, cyclisation of, synth of hydroxypyrrolidines and hydroxypiperidines, 3379
4-phenylsulfonyl-1,6-dioxaspiro[4,5]decan-10-ones, Na/Hg reductive rearrangement to 5-hydroxy-1,6-dioxadecalins, 3179
– substituted thiophene chromophores for second order nonlinear optics, 7279
sulfones derived from methionine and homocysteine thiolactone, cyclisation and Ramberg-Bäcklund chemistry of, synth of amino ketones and amino cyclopentenone respectively, 7457
vinylic –, alkylation to give α-alkyl allylic – using

phosphazene base P_4-t-Bu, 5249
vinylic –, isomerization to allylic – using phosphazene base P_2-Et, 5247
Sulfonic acids and derivs
2-amino-2-methylpropanesulfonic acid, synth, 7319
camphorsulfonic acid as catalyst for oxidation of sulfides with t-butyl hydroperoxide, 7129
chiral β-sulfonopeptides, synth both in solution and in solid phase using sulfonyl chlorides derived from enantiomerically pure 2-substituted taurines under mild coupling conditions, 8589
disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid, complexation with cyclodextrins, no distinction between host and guest, 7433
2,6-disubstituted benzenesulfonates and benzenesulfonyl chlorides, synth by utilising the alkyl sulfonate *ortho* directing group, 3639
3-enol sulfonates from steroid 3-ketones using 3-oxa-octafluoropentanosulfonylfluoride,subsequent conversion to 3-carboxyl unsaturated steroids, 8553
inversion of configuration of secondary alcohols using chloromethanesulfonyl chloride and CsOAc, 6145
isobutyl esters for protection of sulfonyl groups in synth of sulfomethyl nucleoside analogues, 4443
lanthanide(III) trifluoromethanesulfonates as catalysts for aqueous aza Diels-Alder reactions of an aldehyde and an amine hydrochloride, 2169
lithium trifluoromethanesulfonate as catalyst for aminolysis of oxiranes, 7715
perfluorobutanesulfonyl fluoride/DBU for formation of epoxides from 1,2-diols, 7497
scandium trifluoromethanesulfonate, catalyst for the addition of allyltrimethylsilane to aldehydes, 3745
β-sulfonopeptides bearing a taurine in place of a penultimate amino acid unit, synth as inhibitors of D-alanyl-D-alanine transpeptidases, 4663
2-(2,3,7,13-tetrahydroxyoctadecanoylamino)ethanesulfonic acid, framework of taurolipid B isolated from fresh-water protozoan *Tetrahymena thermophila*, absolute configuration, 6347
triflic anhydride, unexpected formation of trifluoromethanesulfinates in triflylation reactions of sterically hindered alcohols and phenols, mechanism, 8359
Sulfonium salts
thiasulfonium salts by monodealkylation of monooxides of 2,2'-bis(alkylthio)biphenyl with triflic anhydride, 667
Sulfonyl compds
(aryl)(phenyl)iodonium triflates, synth by ligand exchange reactions between β-[[(trifluoromethylsulfonyl)oxy]vinyl](phenyl)-iodonium triflates and aryllithiums, 3721
camphorsulfonyl oxaziridines as starting materials for prep of 2',4'-difluoro-(*R*)-2-hydroxypropiophenone, a key intermediate to Sch 42427 and ER-30346 antifungals, 8117
2,6-disubstituted benzenesulfonates and benzenesulfonyl chlorides, synth by utilising the alkyl sulfonate *ortho* directing group, 3639
2-(isopropylsulfonyl)-bicyclo[2.2.1]hept-5-ene-2-carbonitrile, reduction of *via* a radical intermediate, 4717
phenylsulfonyl-activated unsaturated carbohydrate derivs, palladium-catalysed [3+2]-cycloaddition reactions of, 2303, 2307
racemic ethyl *N*-phenylsulfonyl-α-bromoglycinate, reaction with alkyl aluminium reagents, synth of α-amino acid derivs, 4795
N-substituted derivs of 1,2-methylene-3,4-aziridino 2-phenylsulfonyl cycloalkanes, synth from epoxy cyclopropanes *via* ring opening with sodium azide and subsequent cyclisation, 3371
sulfonyl chlorides derived from enantiomerically pure 2-substituted taurines, use for both solution and solid phase synth of chiral β-sulfonopeptides under mild coupling conditions, 8589
1,3,5-tri-*O*-benzoyl-2-imidazolesulfonyl-α-D-ribofuranose, fluorination of, synth of 1,3,5-tri-*O*-benzoyl-2-deoxy-2-fluoro-α-D-arabinofuranose *via* a fluorosulfonate intermediate, 17
Sulfoxides
abnormal Pummerer cyclisation of – to sulfides, 5217
aryl alkyl –, radical allylations, stereochemistry, 8387
assistance from sulfinyl group with concomitant deoxygenation in hydrolysis of nitriles, 4569
asymmetric Diels-Alder reactions of sulfinylbutadienes derived from 3-mercaptobornan-2-ol, effect of various Lewis acids, 4537
S (–)-benzyl phenyl sulfoxide, conjugate addition to but-2-en-4-olide, synth of (–)-podophyllotoxin, 4791
N-t-butyloxycarbonyl-3-*p*-toluenesulfinylbenzoquinone-4-imine, synth and Diels-Alder reacti-

vity, 3187
by oxidation of sulfides with t-butyl hydroperoxide catalysed by camphorsulfonic acid, 7129
by reaction of dimethyl (*S*)-*p*-tolyl-sulfinylmethylphosphonate with a suitable Grignard reagent, 6017
catalysis of − reduction by PPh_3 using $ReOCl_3(PPh_3)_2$, 7941
derived from methionine and homocysteine thiolactone, Raney nickel desulfurisation of to give acyclic α-amino ketones and *anti*-amino alcohols, 7457
dihydrofuranyl Fischer carbene complexes carrying thioether groups, oxidation to − by methyltrioxorhenium/H_2O_2, 9385
enantioselective synth of 1,3-dithiane 1-oxide using whole-cell bacterial oxidation, 6117
α-(1,2-epoxyalkyl)-αβ-unsaturated −, chiral synth and S_N2' reactions with organo-cyanocuprates, 8031
from oxidation of sulfides by methyl(trifluoromethyl)dioxirane, involvement of a sulfurane intermediate, 2299
o-(1-hydroxyalkyl)-*p*-(phenylsulfinyl)phenols, protection of both OH groups by dimethylsilylenedioxy ether formation before acetoxy-desulfinylation under Pummerer-type conditions, 7545
oxidative fragmentation of 1-alkenyl − using SO_2Cl_2, generation of 1-alkenylsulfinyl chlorides, 2345
phenacyl sulfoxide bearing nitrogen-containing heterocycles, Diels-Alder reaction with 2,3-dimethyl-1,3-butadiene, synth of 6-benzoyl-5,6-dihydro-3,4-dimethyl-2*H*-thiapyran, 3739
pyrolytic β-elimination of − promoted by microwave irradiation, 1855
by [2,3]-rearrangement of difluoroallylic alcohols with C-S bond formation, 6403
reduction to sulfides by HCl in acetonitrile, 4569
sulfoxide glycosylation reactions, activation of sulfinylglycosides by the TfOH/TEP system in glycosylation to afford disaccharides, 1477
thietane nucleosides by application of Pummerer reaction to thietane sulfoxides, 7569
thiophilic addition of organolithiums to aliphatic α-methylthio-sulfines, formation of dithioacetal *S*-oxides, 4507
use of Pummerer cyclization to generate indoline quaternary C-3 centre, approach to 3,4-seco-akuammilan derivs, 6611
vinyl sulfoxides bearing oxygenated substituents at allylic positions, nucleophilic epoxidation of with MOO-t-Bu, 6793

Sulfoximides/sulfoximines
α-benzoyl and α-methoxycarbonyl allyl sulfoximines, Pd-catalyzed rearrangement to γ-amino-αβ-unsaturated ketones and esters, 5417
chiral sulfoximine/Pd-complexes as catalysts for enantioselective allylic alkylations, 3985

Sulfur compds
generation of S_2 by thermolysis of *N*-2-arylaminophenyl-4-chloro-1,2,3-dithiazol-5-imines, trapping, 4589
monooxides of 2,2'-bis(alkylthio)biphenyl, monodealkylation of by treatment with triflic anhydride, synth of the corresponding thiasulfonium salts, 667

Sulfur halogen compds
DAST for fluoro-dehydroxylation of $Cr(CO)_3$ complexes of secondary benzylic alcohols, 5691
diethylaminosulfur trifluoride (DAST), reaction with α-fluoro-α-phenylthio-β-hydroxyesters with SPh migration, formation of α,α-difluoro β-phenylthio esters, and subsequent synthetic reactions, 8759

Sulfur heterocycles
6-arylthieno[2,3-*d*]-1,3-dithiole-2-thione, formation by S extrusion from 1,3-dithiolo[1,4]-dithiin-2-thione, 2821
6-benzoyl-5,6-dihydro-3,4-dimethyl-2*H*-thiapyran, synth by thermolysis of phenacyl sulfoxide bearing nitrogen-containing heterocycles in the presence of 2,3-dimethyl-1,3-butadiene, 3739
1,3,4,2-dithiastannaborete deriv, synth and thermolysis: generation of ArB=S, 5145
1,3-dithioledithione, generation and cycloaddition to styrene and stilbene, preparation of Ph-substituted 5,6-dihydro-1,3-dithiolo[4,5-*b*][1,4]dithiin-2-thiones, 7603
isothioureas by Diels-Alder reactions of amino-heterocycles with formaldehyde and electron-rich alkenes, 2615, 2619
thianthrene cation radical, reaction with alcohols, isolation and chemistry of 5-cyclohexyloxythianthreniumyl perchlorate, 1749
thiasulfonium salts by monodealkylation of monooxides of 2,2'-bis(alkylthio)biphenyl with triflic anhydride, 667
2,8,17-trithia[$4^{5,12}$][9]metacyclophan-4-ene, a cyclophane with a tertiary olefin strapped across the face of a benzene ring, synth from isobutylene-α,γ,γ'-tricarboxylic acid, structure, 8125
see also the individual ring systems

Sulfuranes
sulfurane intermediate in oxidation of sulfides by methyl(trifluoromethyl)dioxirane, 2299
Sulfuric acid and derivs
kakelokelose, sulfated mannose polysaccharide from tunicate *Didemnum molle*, 1979
sulfated β-1,6-linked oligosaccharide mimetic, potent inhibitor of HIV replication, synth, 2549
sulfuric acid supported on silica-gel as catalysts for nitration of aromatics with nitric acid and isopropyl nitrate, 513
Sultams
camphorsultam, chiral auxiliary in synth of α-allylic α-hydroxylamino acids, 5273
Sultones
desulfurization of – with simultaneous methylenation, 3841
Supported reagents
acyl nitrates supported on montmorillonite or chrysotile for oxidation of alcohols, synth of aldehydes and ketones, 5029
alumina supported reaction of aniline derivs with bis(2-bromoethyl)-*N*-(ethoxycarbonyl)amine, synth of the phenylpiperazine ring, 319
amino acid linked by its side chain to a solid support for prep of head-to-tail cyclic peptide libraries of varying ring size, 591
coupling of *erythro*-ω-aminosphingosine to Affi-Gel 10 to create an affinity column for sphingosine kinase purification, 3279
ethyl 3-(dimethylamino)propyl carbodiimide on a solid support for synth of thiol esters from thiols and carboxylic acids, 4305
PEG-supported Burgess reagent for cyclodehydration of β-hydroxy amides and thioamides, synth of oxazolines and thiazolines, 4659
3′-phosphoryl-*O*-tyrosine-terminated oligonucleotides, synth on CPG and TentaGel matrices, 3093
photoinduced electron transfer reactions using photosensitisers covalently anchored on silica, 381
resin bound azomethine ylid, three component 1,3-dipolar cycloaddition of, solid-phase synth of proline analogues, 3671
solid phase extraction with C_{18}-bonded silica for enrichment of endohedral metallofullerenes, 9249
sulfuric acid supported on silica-gel as catalysts for nitration of aromatics with nitric acid and isopropyl nitrate, 513
tryptophan linked to the Kaiser oxime resin, Pictet-Spengler reaction with aldehydes, synth of 1,2,3,4-tetrahydro-β-carboline derivs, 3963
Wang resin bound H-phosphonates for condensation of imines, synth of α-amino phosphonates and phosphonic acids, 5457
see also Polymer support, Solid support
Surfactants
(2-acetyldecyl)-trimethylammonium iodide, a base-labile surfactant, synth from corresponding ketone involving Mannich reaction followed by quaternisation, 9135
cetyltrimethylammonium chloride, use in conducting Michael addition of nitroalkanes to conjugated enones in water, 8027
Suzuki reactions
– catalyzed by preformed Pd and Pd/Ni clusters, 4499
combined Shapiro-Suzuki reaction to provide aryl-alkenes without isolation of the boron containing intermediates, 429
cross-coupling of arenediazonium tetrafluoroborates with arylboronic acids, 3857
macrolactin A, synth by sequential couplings of vinyl groups, 3501
prep of dinuclear ruthenium complexes using functionalised mononuclear complexes as building blocks in Suzuki procedure with a difunctionalised aromatic spacer, 2963
synth of 5-methylchrysene and its 2-hydroxy- and 8-hydroxy derivs from 2-naphthalene boronic acid, 6271

Tannins
castavinols, glucoside polyphenol series from Bordeaux red wines, structures, 7739
Tantalum and compds
tantalum and niobium complexes as Lewis acids, 6011
Tautomerism
oxo form of 11-hydroxycryptolepine and related quinolinones, 4283
solvation effects on the tautomerisation of *N,N*-dimethylvaline, 6673
Technetium and compds
N_2S_2 conjugated BAT phenyltropane ligand (BAT = bis(aminoethanethiol)), synth as a potential technetium-99m imaging ligand for dopamine transporter, 4353
Tellurium and compds
alkenyl tellurides, reaction with diethylzinc, synth of alkenylzinc reagents, subsequent cross-coupling with 4-iodotoluene, 4741
alkyl/aryl alkynyl tellurides, hydrozirconation, synth of α-telluro-α-zirconated ethylenes and

α-telluro-αβ-unsaturated ketones, 7537
benzo[c]tellurophene, *o*-quinonoid heterocycle, synth from 1,3-dihydrobenzo[c]tellurophene diiodide, 9149
(*Z*)- or (*E*)-β-bromovinyl tellurides, synth by reaction of aryltellurium tribromides with alkynes and subsequent reduction, 7417
ketene butyltelluro(phenylseleno)acetals by Al/Te exchange reaction, 831
telluromethylation, potassium tellurocyanate reaction with bromo- and iodoarenes, synth of aryl methyl tellurides, 4361

Templates

bis-pyranoside alkenes as templates for the assembly of tetrahydrofurans by prep of a bis-THF diol core structure, 3619

Terpenes and terpenoids

2-*epi*-cedrene isoprenologue, diterpene bearing a tricyclic cedrane-type skeleton, synth by construction of a tricyclo[5.3.1.$0^{1,5}$]undec-9-en-8,11-dione by means of electrochemical oxidation, 4043
(+)-cordiaquinone B, merosesquiterpenoid quinone with antibacterial activity from root of *Cordia corymbosa*, synth from (4*S*,5*S*)-4-methyl-5-trimethylsilyl-2-cyclohexen-1-one, 7075
(±)-6β-isovaleroxylabda-8,13-diene-7α,15-diol, diterpene diol from pulmonate limpet *Trimusculus reticulatus*, synth from (±)-9-methoxycarbonyl-4,4,10-trimethyl-Δ^6-8-octalone, 7071
13-acetyl-9-deoxy-9-hydroxybaccatin III, acid-catalyzed rearrangement to *abeo*-taxanes with 5,7,6 fused system and opened oxetane ring, 6435
acorone, synthetic approach by cyclopentenone spiro-annulation to cyclohexane-1,4-dione, 1683
andrastins A-C, C_{28} metabolites with steroidal framework from *Penicillium* sp. FO-3929, structure by NMR, 1265
(±)-antheridic acid, synth, 7553
apiananes, novel C_{23} – from *Salvia apiana*, 4213
asteriscanolide, cyclooctane sesquiterpene from *Asteriscus aquaticus* , intramolecular [2+2] photocycloaddition-fragmentation approach to synth of, 2177
azetidine-type taxanes, synth from 2′-deacetoxy-austrospicatine, 3203
bridgehead alkylation of a propellanone in synth of modhepene intermediate, 7295
by oxidative degradation of larixol and larixyl acetate, constituents of the oleoresins of *Larix* species, 4705
camphene and camphor, derived doxyl radicals, 7933
(±)-Δ^2-cedrene, sesquiterpene with tricyclo-[5.3.1.$0^{1,5}$]undecane framework, synth using intramolecular anionic cyclisation of the corresponding bromophenol, 4421
chiral bisterpenylhaloboranes, convenient synth using terpene, BX_3 and R_3SiH in Et_2O, main examples using 2-alkylapopinenes, 8345
chiral synth of 3a,4-dimethylhydrindane-2,6-dione and -2-ones from (*R*)-carvone, 1679
chokols A, G, cyclopentanoid –, synth of precursor in *rac* form using boron/zirconocene methods, 2735
citral dienol acetate, Diels-Alder addition to benzoquinones, synth of 2-isoprenylmethyl naphthalene-5,8-diols, proposed acetyl group migration, 8037
clusianosone, grandone, nemorosone, hydrohynemorosone, polyisoprenylated benzophenones from floral resins of *Clusia* spp., 6427
α-cuparenone, bicyclic terpene from *Thuja orientalis (mayurpankhi)*, synth involving photorearrangement of α-halo aryl ketone to 1-methyl-1-(*p*-tolyl)acetic acid, 2629
exo-2,3-diaminobornane–derived imidazolidinone as chiral auxiliary for enolate alkylations, 4565
dipuupehedione, cytotoxic dimeric sesterterpene from sponge *Hyrtios* sp., 3861
dolabellanes, synth of bicyclo[9.3.0]tetradecane skeleton using organo-Zr methods, 7661
erigerol, diterpene from *Erigeron philadelphicus* L, synth of a key intermediate diol from metallated α-alkoxypropargyl and γ-alkoxyallenyl derivs, 5519, 5523
erinacines E-G, diterpene xylosides which stimulate nerve growth factor synth, from the mycelia of *Hericium erinaceum*, structures, 7399
(+)-eurylene, squalenoid with two tetrahydrofuran rings, synth, 2039
forskolin, labdane diterpene isolated from the roots of *Coleus forskohlii*, total synth *via* a *trans* fused enone intermediate, 1015, 1019, 1023
forskolin, synth of carbocyclic forskolin analogues, 3079
functionalised 20-norkaurenoids, synth by rearrangement of 6β-hydroxy-gibberellin-7α-carboxaldehyde, 8937
(*S*)-geranylcitronellol, diterpene pheromone from *Bombus* and *Psithyrus* bees, synth via conjugate addition of functionalised copper reagent to 2-substituted *exo*-bornyl crotonates, 7127

halitunal, antiviral diterpene aldehyde from marine algae *Halimeda tuna*, synth from (+)-genipin, 2253
herbertenediol, isocuparane sesquiterpenoid from liverwort, synth, 1261
hippospongic acid A, triterpenoic acid from marine sponge *Hippospongia* sp., structure and biological activity, 7765
hopanoids, configurations of carbapseudopentose moieties of hopanoids of the bacterium *Zymomonas mobilis* and the cyanobacterium *Anacystis montana*, 1791
ent-isocopalic acid glycerides, synth of two diastereoisomers, 3549
isofregenedane diterpenoids, synth by octahydronaphthalene skeletal rearrangements catalyzed by I_2, 1659
isopinocampheyl bromoborane, asymmetric hydroboration reagent for prochiral alkenes, 9021
larixol I, labdane diterpenoid, side-chain degradation and manipulation, 1241
(±)-lavandulol, monoterpenoid, synth using Si methodology, 6929
(±)-ledol, an aromadendrane sesquiterpene with antifungal activity, total synth using type two intramolecular Diels-Alder reaction coupled with bridged to fused ring interchange, 949
(±)-lubiminol, spirovetivane phytoalexin, synth by rearrangement of cyclobutyl carbinyl precursor, 8703
manicol, antineoplastic sesquiterpene from the root bark of *Dulacia guianensis*, construction of the carbon skeleton from (*R*)-perillaldehyde, 525
3-mercaptobornan-2-ol, asymmetric Diels-Alder reactions of derived sulfinylbutadienes, effect of Lewis acids, 4537
methyl carvone, reaction with methyl acrylate, three Michael reactions and one Dieckmann form tricyclo[5.3.1.$0^{3,8}$]undecane system, 8061
neohancosides A and B, monoterpene diglycosides from *Cynanchum hancockianum*, synth using fluoride as a glycosyl donor, 4015
neoliacinic acid, sesquiterpene from leaves of *Neolitsea acciculata*, synth of bicyclic core structure by [2,3]-sigmatropic ring-expansion of an oxonium ylid, 5605
neovibsanines A and B, tricyclic diterpenes from leaves of *Viburnum awabuki*, structures, 6767
nopinone and β-methylverbanone, conversion into bridged 2,3,4,4a-tetrahydro-1*H*-fluorenes using Nazarov cyclization with derived allylic benzyl alcohol, 7241
nudenoic acid, sesquiterpenoid from liverwort with tricyclo[7.2.1.$0^{1,6}$]dodec-7-ene skeleton, 9307
(±)-(13*E*)-2-oxo-5α-*cis*-17α,20α-cleroda-3,13-dien-15-oic acid, stereoselective synth, product non-identical with reported natural product, 6869
palauolol, anti-inflammatory sesterterpene from the sponge *Fascaplysinopsis* sp., structure and absolute stereochemistry, 3951
(±)-pentalenene, sesquiterpenoid isolated from *Streptomyces griseochromogene*, synth *via* an intramolecular Diels-Alder reaction of trisubstituted cyclopentadiene, 89
perillyl alcohol, cyclopropanation, regioselection and enantioselection, 7925
phomactin A, synthetic approach to furo[2,3,4-*de*][1]benzopyran system, 275
phomactin D, PAF antagonist marine diterpenoid from marine fungus *Phoma* sp., synth from L-ascorbic acid, 7107
phorbol CD ring skeleton, synth by asymmetric intramolecular cyclopropanation of a silyl enol ether, 2449
α- and β-pinene, electron-transfer induced deprotonation: ring-closed vinylcyclobutane cation radicals, 2385
preoleanatetraene, bicyclic triterpenoid hydrocarbon from rhizomes of *Polypodiodes formosana*, structure, 4381
pulegone, conversion into (*R*)-5-methylcyclohex-2-en-1-one, 3125
qinghaosu/artemesinin, behaviour in presence of heme and non-heme Fe(II) and Fe(III), 253, 257
rabdoumbrosanin, its 16,17-dihydro and 8,14-epoxy derivatives, 8,9-secokaurane diterpenes, isolation from a liverwort, 9387
rhopaloic acid A, norsesterterpene from marine sponge *Rhopaloeides* sp., inhibitor of gastrulation of starfish embryos and cytotoxin, structure and biological activity, 2265
sarcoglane, diterpene with tricyclo[7.5.0.$0^{10,14}$]-tetradecane skeleton from soft coral, structure, 6909
scopadulcic acids A and B from *Scoparia dulcis*: scalemic synth of the acid skeleton by γ-alkylation at C-9 in abietane framework and ring-D formation by aldol and alkylation reactions, 8459, 8463

sequithuriferol, α- and β-duprezianene, tricyclic sesquiterpenes from the essential oil of wood of *Juniperus thurifera*, structures, 3757
(*RR/SS*)-sinulariol-B, macrocyclic cembranoid diterpene from Japanese soft coral *Sinularia mayi*, total synth from *E*-geraniol, 671
sorgolactone, strigol analogue, denitration reactions in synth, 3491
spongian-16-one, synth by cascade radical process, 4191
synth of intermediate with oxygenated B ring and non-aromatic C ring by C1-C2 pinacol coupling, 2321
taxanes: synth of taxol A-ring components by diastereoselective additions of alkenyl lithiums to aldehydes, 9139
taxanes, acid and base catalysed rearrangements of 9,10-dioxotaxanes, generation of wallifoliol from 10-dehydro-10-deacetylbaccatin III, 727
taxanes, construction of the B-ring of taxanes by diastereoselective triple radical cyclisation of a bromomethyldimethylsilyl allyl ether, 6295
taxanes, 10-deacetyl-10-dehydrobaccatin III-type taxanes, reaction with hydrazine to yield the 7,9-pyrazoline adducts which retained their anticancer activity, 7837
taxanes, highly functionalised AB taxane ring system, synth using 1,4-dioxene, 7013
taxanes, introduction of C-1 to C-5 functionality into the taxane ABC ring system by isomerisation of 2-ketotax-3-enes followed by autoxidation and epimerisation, 6639
taxanes, oxidative functionalisation of positions 1, 2, 9 and 10 of 5-*O*-cinnamoyltaxicine I, 9189
taxanes, synth of bicyclo[6.4.0]dodecane system present in taxanes by Haller-Bauer cleavage in tricyclo[8.2.1.$0^{2,9}$]trideca-13-ones, 2289
taxanes, synth of a carbonate precursor to taxane involving condensation of the α-trimethylsilyloxyaldehydes with cyclohexenyllithium, 3313
taxanes, synth of three C-4 methyl ether bearing paclitaxel analogues and unexpected reactivity of 4-deacetyl-4-methyl ether baccatin III, 3935
taxanes, 2′-*epi*-taxol, synth from natural paclitaxel by formation of oxazoline on the side chain with concomitant inversion of the C-2′ followed by hydrolysis, 4785
taxanes, tricyclic ring system of the taxane diterpenes, synth *via* an A→ABC intramolecular Diels-Alder construction and subsequent elaboration to a taxinine analogue, 8069
taxol, 11,12-dihydro-4-deacetyldocetaxel, synth from 10-deacetylbaccatin III, 1777
tricholomenyns C, D, E, dimeric dienyne geranyl cyclohexenones from fungus *Tricholoma acerbum*, 6223
tricyclo[6.3.1.$0^{1,6}$] and tricyclo[7.2.1.$0^{1,6}$] dodecanes, component of diterpene systems, synth, 8429
7-*O*-trimethylsilyl-13-oxobaccatin III, NaH/MeI rearrangement to ten-membered A-*seco* and (6,6)-AB-*abeo* structures by retro-aldol and aldol recyclization processes, 9365
turmeronol B, phenolic sesquiterpene ketone from *Curcuma longa*, synth from 2-hydroxy-4-methylacetophenone, 2279
(+)-valerane, synth from (*R*)-carvone, 2863
viburnols A-E, rearranged dammarane triterpenoids from *Viburnum dilatatum*, structure, phytoalexic properties, 4157
vulgarone A and pingilonane, synth by rearrangement of 7β,9α-di- and 7β,8α,9α-tri-acetyloxylongipin-2-en-1-one, 8093
see also Cembranoids, Gibberellins, Iridoids, Limonoids, Quassinoids, Retinoids, Squalene, Steroids and sterols, Vitamins A and D

Tetramic acids
see Pyrrolidinones

Tetrazines
dimethyl 1,2,4,5-tetrazinedicarboxylate, cycloaddition to 2,3-dioxabicyclo-[2.2.2]oct-5-ene and -[2.2.1]hept-5-ene, and 6,7-dioxabicyclo[3.2.2]-non-2- and -8-ene and -2,8-diene, 921
polymer-supported 1,2,4,5-tetrazines, inverse electron demand Diels-Alder reactions of, synth of functionalised 1,2-diazines bearing a sulfur-based leaving group, 8151

Tetrazoles
5-substituted tetrazoles by protection, metalation and electrophilic substitution of 5-methyl tetrazole, 3651

Tetronic acids
see Furanones

Thallium and compds
Tl(III) trifluoroacetate ring expansion of 1-vinyl cyclobutanol and cyclopentanol trimethylsilyl ethers to 2-methylene cyclopentanones and cyclohexanones, respectively, 3865

Theoretical calculations
ab initio – on heterocyclic 6π carbenes, 149
ab initio RHF and MP2 calculations to investigate the mechanism of reaction of butadiene with allyl cations, 1759
ab initio, transition states for methanol addition

to pentadienyl cations, stereochemistry of intramolecular ether cyclization, 1257
absolute and relative energies for formation of caged cyclopentylidenecarbene from semiempirical and *ab initio* calculations, 467
application of computer-aided conformational analyses to synth of key 18-membered intermediate to tedanolide macrolide, 385
π4s + π2s cycloaddition of allyl anion with ethylene, 7679
1,2,3-cyclooctatriene, strain energies by various methods, 4907
density functional theory for – of bond dissociation energies of substituted methanes, isodesmic determination of radical stabilization, 6473
DFT/6-31G* – of boronium ion analogue of tropane ring system (NH^+-BH_2^--NH^+ replacing CH-NH_2^+-CH), 2729
HOMO-LUMO – on 4-(β-benzoylethenyl)imidazoles, 3915
PM3 and *ab initio* – on transition states of retro-ene reaction with COS extrusion of allylic dithiolcarbonates, 2445
RHF/3-32G *ab initio* – of reaction profile of tandem Diels-Alder reaction of DMAD to bi-(cyclopenta-2,4-diene), 7573
RHF/6-31G* – of ground state conformation of cyclic diazo compds, 7209
RHF/PM3 transition states to cycloaddition of 2-methoxypropionaldehyde and Li enolate of *S*-benzyl thioisobutyrate, 245
variation of coplanarity between aryl ring and cationic centre at transition state: kinetic results and *ab initio* calculations, 4173
see also Molecular modelling/mechanics

Thermochemistry
ab initio molecular orbital study of 2,3-dihydrooxepin and 1,3-cycloheptadiene, vinylic *vs* allylic deprotonation, 9127
ab initio molecular orbital study on Lewis acidity of TMS-Cl and TMS-CN toward an α,β-unsaturated aldehyde: importance in organocuprate 1,4-additions to enones, 8471
ab initio RHF and MP2 calculations to investigate the mechanism of reaction of butadiene with allyl cations, 1759
absolute and relative energies for formation of caged cyclopentylidenecarbene, 467
activation barrier for the nucleophilic attack of CN^- on [1.1.1]-propellane compared to total strain energy released, 5573
activation barrier to axial torsion in 2,2'-bis-(diphenylphosphino)biphenyl, 47
AM1 calculations to study mechanism of stereo- and regioselective ether-ring opening of 1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldioxy arene systems with boron tribromide, 3651
association constants and thermodynamic parameters for complexation of β-cyclodextrin and deformed β-cyclodextrins, 1825
chiral recognition energy based on simple model and van der Waals potential, role of van der Waals forces in enantioselective processes, 2581
conformational analysis of oligonucleotides where the phosphodiester linkage has been replaced by an acetylenic bond, comparison between carbon-, sulfur- and oxygen-containing analogues, 5511
DSC, MM2 and ^{1}H NMR study of [2+2]retrocycloaddition of 4,5,10,11-tetramethylheptacyclo[8.2.1.1^{2,5}.1^{4,7}.1^{8,11}.0^{1,8}.0^{2,7}]hexadecane to an isomeric diene, 8601, 8605
energetics of hydrate and hemiketal formation for highly fluorinated ketones, 9165
importance of entropy in stereoselection for reduction of t-butylcyclohexanone by lithium aluminium hydride, 2185
kinetic *versus* thermodynamic control in Michael reaction of azoles with α,β-unsaturated nitriles and esters catalysed by bicyclic guanidines, 4423
kinetic versus thermodynamic control of thermal rearrangement of 7-vinylnorcaradienes, 7761
semi-empirical MO calculations for ring expansion of azetidinylidenecarbenes to azacyclopentynes, 8101
solution heterolytic bond dissociation energies of polyhaloalkyl radical anions from a cycle using homolytic bond energy and electrochemical data, 1457
stability and quantum efficiencies for 4-hydroxyphenacyl adenosine-5'-triphosphate and 4-hydroxyphenacyl phosphate, 6259
stability studies of *cis*- and *trans*-1,7,9-trioxadispiro[5.1.5.3]hexadecane, 5461, 5465
thermodynamic properties of oligonucleotides containing 2'-*O*-phosphorylated ribonucleosides, 6741
thermodynamic stability of heterochiral dodecadeoxynucleotides containing an unnatural L-enantiomer of D-deoxyribose for duplex formation, 5551

Thiadiazoles
nucleophilic heteroaromatic substitution of halide by alkoxide in –, pyridazines, phthalazines and thiazoles, amide ions as activating

groups, 4065
Thiafulvalenes
bis(benzo)- and bis(naphtho)-fused derivs of bis-(ethylenedithio)tetrathiafulvalene, synth employing [4+2] cycloaddition of oligo(1,3-dithiole-2,4,5-trithione) with olefins, 8085
charge transfer complexes of [60]fullerene-tetrathiafulvalene systems with tetrafluoro-tetracyano-*p*-quinodimethane, electrochemical characterisation, 5979
polyacetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivs by cycloaddition of hex-3-yne-2,5-dione onto a π-CS_2 iron complex and 3-thioxo-1,2-dithioles, 8861
soluble tetrathiafulvalene deriv with double bridge to benzoquinone, synth and cyclic voltammetry, 2503
tetrathiafulvalene radical/polar crossover reaction in synth of derivatives of octahydro-1*H*-pyrrolo[2,3-*d*]carbazole, 2511, corrig. 5027
unsymmetrical bisdithiino-tetrathiafulvalenes, synth, 2821
Thiazepines
eudistomin and eudistomidin alkaloids with an oxathiazepine ring system, approach to by nucleophilic addition of chiral enolates with chiral iminium ion, 575
Thiazoles
benzothiazolylchloroallyllithium, synth by deprotonation of benzothiazolylallyl chloride with lithium diisopropylamide, subsequent reaction with carbonyl compds forms benzothiazolylvinyl oxiranes, 4777, 4781
2,2′-bithiazolyl-*p*-t-butylcalix[4]arene podands, synth and fluorescence properties, 5889
cyclodidemnamide, 21-membered cyclopeptide containing 2,4-disubstituted thiazole ring, synth, 9111
2,4-disubstituted thiazoles by Wittig condensation of C-4 thiazole phosphonium methylides, 983
2-mercaptobenzothiazole/ZnO as catalyst for reaction of dialkyl malonate esters with P_2S_5/S_8, synth of 5-alkylthio-3*H*-1,2-dithiole-3-thiones, 2137
methyl substituted C-5 propyne and C-5 thiazole oligodeoxynucleotides, RNA duplex formation by, 3959
2-methylene-2,3-dihydro-–, synth on solid support, 6213, corrig. 7865
nucleophilic heteroaromatic substitution of halide by alkoxide in –, pyridazines, phthalazines and thiadiazoles, amide ions as activating groups, 4065
pateamine, 19-membered bis-lactone containing 2,4-disubstituted thiazole ring, synth of core structure, 9107
Ro24-5913, an *N*-succinyl-3-(2-thiazolethenyl)-anilide leukotriene D_4 antagonist, synth *via* (*E*)-4-cyclopentyl-2-[2-(3-nitrophenyl)ethenyl]-thiazole, 5445
2-styryl – from 2-methyl compds, improved technique and proposed enamine tautomer intermediate, 8659
thiazolium catalysis, mechanism of, 8241
Thiazolidines
4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, for kinetic resolution of *sec*-alcohols, 6777
dimethyl 2,2,5,5-tetramethylthiazolidine-4-phosphonate, chiral synth by phosphite addition to 3-thiazoline, 9291
1,3-oxazolidine- and thiazolidine-2-thiones, synth by hetero-1,3-dipolar cycloaddition of dithiolane-isocyanate iminium methylides, 711
Thiazolines
role of bis(thiazolin-2-ylidene)s as catalytic species in benzoin condensation, 5019
2-bromo-2-–, Stille cross-couplings forming 2-substituted –, 4857
by cyclodehydration of β-hydroxy amides and thioamides using PEG-supported Burgess reagent, 4659
curacin A, antimitotic agent from Caribbean cyanobacterium *Lyngbya majuscula*, synth from geraniol, 4397
curacin A, cyclopropropyl – from cyanobacterium, synth, 7167
curacin A, cytotoxic agent from the cyanobacterium *Lyngbya majuscula*, total synth involving Julia coupling, Wittig reaction and dehydrative cyclisation, 953
cyclodidemnamide, 21-membered cyclopeptide containing 2,4-disubstituted 2-thiazoline ring, synth, 9111
synth by condensation of a triisobutylaluminium complex of cysteamine HCl with a variety of carboxylic esters, 2935
2,2,5,5-tetramethyl-3-thiazoline, asymmetric hydrophosphonylation, use of chiral Ti and lanthanide catalysts, 9291
Thietanes
– nucleosides by application of Pummerer reaction, 7569
Thiiranes/thiirenes
thiiranium (episulfonium) salts in migrations of PhS groups during cyclic ether isomerizations,

3525

Thioacetals

dithioacetals, *gem*-difluorination mediated by *p*-methoxyiodobenzene chlorofluoride, synth of hypervalent iodobenzene chlorofluorides, 4725

dithioacetals and oxathioacetals, deblocking using periodic acid, conversion to the corresponding carbonyl compds, 4331

formation from aldehydes and ketones using anhydrous $ZrCl_4$ on silica gel as catalyst, 4621

formation from aldehydes and ketones using kaolinitic clay as catalyst, 4605

from dithiol addition to 3(2*H*)-thiophenone 1,1-dioxide, 119

homoallylaldehyde –, Lewis-acid catalyzed coupling of allylsilanes with tris(phenylthio)methane, 6085

ketene – by elimination from β-haloacetals using base and PT catalyst, comparison of yields using microwave and ultrasound activation, 1695

perfluoroalkylated dithioketals, reaction with phenyllithium, oxidation of resulting vinyl sulfides and further reaction with phenyllithium yields perfluoroalkylated triphenylethylenes, 5905, corrig. 7665

thioacetals derived from aldehydes and ketones, unmasking of to the corresponding carbonyl compds by exposure to a solution of nitrogen oxides in dichloromethane, 1897

thiophilic addition of organolithiums to aliphatic α-methylthio-sulfines, formation of dithioacetal *S*-oxides, 4507

Thioacids

α,α-difluoromethylene phosphonothioic acids, 2,2-disubstituted-1,1-difluorophosphonates and phosphonothioates, synth, 2229, 2233

Thioalkenes

1-arylthio-1-nitroalkenes, nucleophilic epoxidation of, synth of *anti*-β-amino-α-hydroxy acid derivs, 2311

thio- and silyl-allenes, Lewis acid-promoted reactions with 1,4-benzoquinones, 327

Thioamides

N-alkyl- and *N,N*-dialkylcyanothioformamides, synth by reaction of 4-chloro-5*H*-1,2,3-dithiazol-5-thione with primary and secondary alkylamines, 3709

N,N-dimethyl-bis(methylthio)-*ortho*-trifluoroacetamide and trifluoromethyl thioamidium salts, heating of and deprotonation of respectively to yield trifluoromethyl azomethine ylids, 5515

β-hydroxy amides and thioamides, cyclodehydration of using PEG-supported Burgess reagent, synth of oxazolines and thiazolines, 4659

N-3-oxoalkylthioamides, synth by reaction of 6-acetoxy-5,6-dihydro-4*H*-1,3-oxaziniumperchlorates with sodium hydrosulfide, 5203

synth of pyrrolidin-2-ylidene malonate esters involving Reformatsky-type reaction between bromomalonate and a thiopyrrolidone, 9403

Thiocarbonyl compds

action of Lawesson's reagent on 4,5-di(phenacylthio)-1,3-dithiole-2-thione, formation of 5-aryl-1,3-dithiolo[1,4]dithiin-2-thiones, 2821

4-(*S*)-alkyl 3-pivaloyl-1,3-thiazolidine-2-thiones, for kinetic resolution of *sec*-alcohols, 6777

5-alkylthio-3*H*-1,2-dithiole-3-thiones, synth by reaction of dialkyl malonate esters with P_2S_5/S_8 with 2-mercaptobenzothiazole/ZnO as catalyst, 2137

6-aryl-3-methoxy-carbonyl-4-methylthio-2*H*-pyran-2-one, carbanion induced ring transformation to 4'-methoxycarbonyl-5'-methylthio-1',3'- terphenyls and methyl(4,6-diarylpyran-2-ylidene)acetate, 93

4-chloro-5*H*-1,2,3-dithiazol-5-thione, reaction with primary and secondary alkylamines, synth of *N*-alkyl- and *N,N*-dialkylcyanothioformamides, 3709

N,N'-disubstituted arylthiohydantoins, reaction with methyl or ethyl iodide and sodium methoxide, conversion to the corresponding hydantoins, mechanism, 7727

1,3-oxazolidine- and thiazolidine-2-thiones, synth by hetero-1,3-dipolar cycloaddition of dithiolane-isocyanate iminium methylides, 711

β-phenylthioalkylketones, synth by phenylthiomethylation of trimethylsilyl enol ethers, 6631

1,2-propadiene-1,3-dithione (carbon disulfide) from flash vacuum pyrolysis of 1,2-dithiole-3-thiones, 4805

protected 2-thia-5-azabicyclo[2.2.1]heptan-3-ones, synth from 4-hydroxyproline as intermediates to carbapenem side chains, 2919

thiobenzophenones, reaction with phenyl[2-(trimethylsilyl)phenyl]iodonium trifluoromethanesulfonate in the presence of tetrabutylammonium fluoride, first isolation of benzyne-thiobenzophenone adducts, 8883

3(2*H*)-thiophenone 1,1-dioxide, Michael addition of thiols and amines to, synth of the corresponding vinyl sulfides and enamines, 119

2,4,6-triisopropylthiobenzophenone, C=O...H

versus C=S...H photochemical abstraction geometry, 2125
see also other specific thiono-compds, Xanthates
Thiocarbonyl oxides
thiophilic addition of organolithiums to aliphatic α-methylthio-sulfines, formation of dithioacetal *S*-oxides, 4507
Thiocyanates
alkyl dithiocyanates, synth by radical additions to olefins in the presence of iodobenzene diacetate, 1889
Thioesters
chiral amino– for addition of diethyl zinc to aldehydes, 8767
α-halosubstituted thioacetates, boron aldol reaction with silyl imines, enantio- and diastereoselective synth of aziridines, 3747
endo-thioester substituted norbornenes, cyclisation of followed by methylthio group rearrangement, synth of a diacetal trioxa-cage compd, 8209
Thioethers
α-(benzotriazolyl)methyl phenyl thioethers, synth and use for the phenylthiomethylation of trimethylsilyl cyanide, trimethylallylsilane and trimethylsilyl enol ethers to substituted thioethers and β-phenylthioalkylketones, 6631
α,α-difluorothioethers from carboxylic acids, intermediates in prep of 1,1-difluoroolefins, 3223
dihydroxylation of olefins containing thio functions, conditions for AD-mix or OsO_4/ferricyanide hydroxylation without *S*-oxidation, 4427
RS- electroauxiliaries, C-C bond formation by electro-oxidation in presence of C nucleophiles, 3157
α-fluoro-α-phenylthio-β-hydroxyesters, reaction with DAST with SPh migration, formation of α,α-difluoro β-phenylthio esters, and subsequent synthetic reactions, 8759
lanthionine, thioether analogue of cystine, synth for combinatorial and solid phase peptide chemistry by Michael addition between Fmoc-L-Cys-allyl ester and Boc dehydroalaninemethyl ester, 1101
macrocyclic bis(1,4-naphthalene disulfide) derivs, synth by $S_{RN}1$ reactions, 1603
oxidative desulfurization-fluorination of trimethyl trithioorthoesters, formation of β-bromo-α,α-difluoroalkyl methyl thioethers, partially fluorinated olefin synth, 7983
phenyl trimethylsilyl –, reaction with Yb metal, reduction of aldehydes by $Yb(SPh)_2$, 3465
phenylthio-alkanediols, cyclization with PhS migration, kinetic *vs* thermodynamic control of products, 3525
stereocontrolled synth, involving PhS migration, of 1,8-dioxa- and 1-oxa-8-thia-spiro[4.5]decanes, 4581
S-(tetrahydropyridinomethyl)-*o*-bromothiophenols, radical cyclization forming spiro-fused piperidines, 5233
tetrathio-14-crown-4, regulator of lipase-catalyzed transesterification in organic media, 4991
thioethers bearing an optically active alcohol, reductive desulfurisation of with Raney nickel-sodium hypophosphite-acetate buffer system, 2271
(*Z*-)trifluoromethyl thioenol ethers, reactivity towards organolithiums, 171
trifluoromethylthio arenes from heating potassium trifluoroacetate with diaryl disulfides, 9057
2,8,14-trithio[15]-*m*- and *p*-phenylene crownophanes, Ag^+ selective receptors, 3495
see also Sulfides
Thioglycosides
asparagine-linked glycoproteins, synth of core trisaccharide *via* –, 8795
methyl 2-thioglycoside of *N*-glycolylneuraminic acid, synth from *N*-acetylneuraminic acid, 2613
thiolinked sialyl Lewis X analogue from neuraminic acid, D-galactose and L-fucose, 1389
unprotected or fully benzylated methyl 1-thio-β-D-galactopyranoside, alcoholysis of promoted by iodine, 5175
Thiol esters
from thiols and carboxylic acids using ethyl 3-(dimethylamino)propyl carbodiimide on a solid support, 4305
Thiols
aminoethanethiol, reaction with D-ribofuranose followed by cyclisation, synth of castanospermine and australine analogues, 49
aryl – from phenols *via* triflates and Pd-catalyzed coupling with $KSSiPr^i_3$, 4523
enantioselective radical-chain hydrosilylation of alkenes using chiral thiol catalysts, 9123
N_2S_2 conjugated BAT phenyltropane ligand (BAT = bis(aminoethanethiol)), synth as a potential technetium-99m imaging ligand for dopamine transporter, 4353
protection/activation of thiol acids with simultaneous *N*-protection and pentafluorophenyl ester protection/activation, 4915
radical reactions with thiols, polar substituent

and solvent effects on the kinetics of, 5845
$RuCl_2(PPh_3)_3$-catalyzed diazocarbonyl reactions, insertion of carbenoid into Si-H, S-H, N-H and O-H bonds, 8815
thiophenol addition to cycloalkenones catalysed by free bases of chiral *N*-substituted porphyrins, 2585

Thiones
arylboranethione (ArB=S), generation and trapping, 5145
5,6-dihydropyridine-2(1*H*)-thiones, synth from *N*-3-oxoalkylamides, 5199
dimethylsilanethione ($Me_2Si=S$), generation by retro-ene cleavage of propargylthiodimethylsilane and cycloaddition with ketene, 7017
oligo(1,3-dithiole-2,4,5-trithione), [4+2] cycloaddition with olefins, key step in synth of aromatic ring-annelated bis(ethylenedithio)-tetrathiafulvalene derivs, 8085
see also Thiocarbonyl compds

Thiophenes
3-amino–, synth on solid support, 6213, corrig. 7865
bathochromic shifts of push-pull 5,5′-disubstituted 3,3′-dihexyl-2,2′-dithiophenes, 1617
bifunctional helicenes with π-deficient pyridine and π-excessive thiophene units, synth using (1*R*,2*S*,3*R*,4*S*)-3-amino-2-hydroxybornane as a chiral auxiliary, 5925
metathetic cyclization of diallyl sulfide to 2,5-dihydrothiophene using Mo alkylidene catalyst, 9373
monooxides of 2,2′-bis(alkylthio)biphenyl, monodealkylation of by treatment with triflic anhydride, synth of the corresponding thiasulfonium salts, 667
sulfone-substituted – chromophores for second order nonlinear optics, 7279
thienylidenevinylene oligomers end-capped with 1,3-dithiol-2-ylidene groups, cyclic voltammetry, UV/vis spectra, 6121
2-thienylmethylene 1,6-dioxa-spiro[4.4]non-3-ene and 1,6-dioxa-spiro[4.5]dec-3-ene derivs, synth, 893
tricyanovinylthiophene, synth by tricyanovinylation of imdazole-thiophenes by reaction of tetracyanoethylene with the thienyllithium of imidazole, 7331

Thiopyrans
6-aryl-3-methoxycarbonyl-4-methylthio-2*H*-pyran-2-one, carbanion induced ring transformation of to 4′-methoxycarbonyl-5′-methylthio-1′,3′-terphenyls and methyl(4,6-diarylpyran-2-ylidene)acetate, 93
by *exo*-Diels-Alder reaction of 4-phenyl-2-*N*-(*R*-(−)-α-(2-naphthyl)ethylamino)-1-thia-1,3-dienes, 123
2,3-disubstituted and 2,3,3-trisubstituted 2H-1-benzothiopyran derivs, synth by cyclisation of 3-(2-t-butylthiophenyl)-prop-2-en-1-ols, 5077

Thiosugars
synth of glucosinolates bearing external thio function from corresponding hydroximoyl chlorides and 1-thioglucose deriv, 5699

Thioureas
guanylation of amines by *S*-methyl-*N*-arenesulfonyl isothioureas, 8711
isothioureas by Diels-Alder reactions of aminoheterocycles with formaldehyde and electron-rich alkenes, 2615, 2619
transformation into substituted guanidines using Lac sulfur on alumina-triethanolamine, 5161, corrig. 7665

Thromboxanes
TXB_2, synth *via* 6,8-dioxabicyclo[3.2.1]oct-2-enemethanol mesylate, 9321

Tin and compds
cascade hydrostannylation of terminal alkynes in α,ω-enynes followed by bis-cyclisation and Stille coupling provides exo-methylene 5/6 and 5/12-17 membered spiro- and bridged-ring heterocycles, 4413
stannylene acetals prepared from disubstituted vicinal diols, alkylation of with 1,2-dibromoethane to provide tetrasubstituted triethylene glycols or with 2-chloroethanol to produce disubstituted triethylene glycols, 433
acyclic enediynes, dienynes, dienediynes, by Pd-catalyzed hydrostannation and ene-yne couplings, 7971
cis-2-alkenyltins, reaction with aldehydes, synth of *anti*-homoallyl alcohols when the substituent at the 2-position of the alkenyltin reagent is bulky, 3701
alkenyltrimethylstannanes, synth of dienes by CuCl-mediated coupling, 1173
γ-alkoxyallyl stannanes, synth from methoxyallyl compd *via* mixed acetal, 3195
allylic tin(IV)-tin(II) chloride-acetonitrile system for allylation of carbonyls and imines, 5951
allylstannylation of alkynes to give β-allyl-substituted vinylstannanes *via* a radical process, 8539
allyltributyltin for allylation of aldehydes using dibutyltin dichloride as catalyst, synth of protected and free homoallylic alcohols, 3955

aryl, alkenyl and alkynyl stannanes, cross-coupling with chiral 2-bromo oxazolines, synth of 2-substituted oxazolines, 1743, 1747
arylstannane by reaction of aryl bromide, magnesium powder, 1,2-dibromoethane and bis(tributyltin)oxide *via* sonochemical Barbier-type reaction, 495
BINOL-Ti(IV) complex for asymmetric allylation of aldehydes accelerated by *i*-PrSSiMe$_3$, 7095
α-boryl radicals, allylation by allyl stannanes, synth of homoallylic boronate esters, 6847
Pd(0)-catalyzed cross-coupling of allylic carbonates with organo-Sn reagents, 6587
cleavage of using organotin oxides and hydroxides, comparison of classical and microwave heating, 5229
conjugate addition of α-oxyalkylstannanes *via in situ* transmetalation using catalytic CuCN, 3811
N-desulfonylation of *N*-acyl alkene and arenesulfonamides using Bu$_3$SnH/AIBN, 1667
dialkylstannylene acetals derived from carbohydrates, reaction with diacyl chlorides and disulfonyl chlorides in the presence of tertiary amines, synth of non-glycosidically linked oligosaccharides, 991
(*E*)- and (*Z*)-1,2-difluoroethenyl stannanes, stereospecific synths, 1921
dihydronaphthalene stannane, coupling with aryl iodides, exclusive cine substitution, evidence for intermediate Pd(0) carbenes, 6997
diorganotin dichlorides as catalysts for the trimethylsilylcyanation of aldehydes and ketones, 2525
enantiomerically enriched α-alkoxystannanes, prep *via* the methoxymenthyl ethers with subsequent regioselective acetal exchange or cleavage of the acetal group to the α-hydroxyalkylstannane, 6649
imidazolyl, thienyl, pyrimidyl, pyridyl, thiazolyl tributyl stannanes, participation in Stille couplings, 7611
intramolecular reaction of γ-aminoallylstannane with aldehyde, synth of hydroxylated piperidines and pyrrolidines, 2109
methoxyethoxymethyl 2-benzenesulfonyl-2-tributylstannylcyclopropyl ether, conversion into 3-acylfurans, 4585
organostannanes, coupling with bromoquinones; synth of fenanthroviridone, gilvocarcin BE-12406X$_2$ and antibiotic WS 5995B, 8953
organostannanes, palladium-catalysed cross-coupling with iodanes, synth of phenyl- or 4-iodophenyl-substituted products, 3723
organostannanes, Pd-catalyzed coupling with β-perfluoroalkyl alkyl halides, 8405
ortho-condensed six- and seven-membered rings with one O atom by allylstannane condensation with acetals, 2869
4-oxa-3-stannacyclopent-1-enes ("stannoxanes"), Pd-catalyzed reaction with aryl halides, synth of (*Z*)-cinnamyl alcohols, 5287
oxo-substituted allenyl- and propargylstannane, intramolecular reaction with aldehyde, synth of cyclic ethers, 3059
α-oxo-β-trimethylstannylmethyl pyrroles, piperidines, tetrahydrofurans, synth by radical cyclization and conversion into α,β-methano-heterocycles, 8967, 8971
Pd-switchable reactions, dimethyl 2-stannylallylmalonate coupling with vinyl epoxides and with allyl ethyl carbonate, dependence of mode (orientation) of cyclization/addition on catalyst, 6591
regio- and diastereo-selective reaction of alkynylstannanes with α-stannyl mixed acetals, allenylcarbinol synth, 3819
α-stannyl dihydropyrans, synth from tungsten dihydropyranylidene carbenes by reaction with tributyltin triflate and triethylamine, 4675
stannylene acetals, phosphorylation by dibenzyl phosphochloridate, 1953
Stille cross-couplings with 2-bromo-4-tributylsilyloxymethyl-2-thiazoline, 4857
sulfated SnO_2 for deprotection of allylic esters, 237
for transesterification of ketoesters, 233
tetraallyltin, solvent promoted addition to aldehydes, synth of the corresponding homoallyl alcohols, 1905
tin-containing four-membered boracycle, 1,3,2,4-dithiastannaboretane deriv, synth and thermolysis of, generation of ArB=S, 5145
tin(II) iodide, γ-*syn*-selective allylation of aldehydes by 1-bromo-2-butene with − and tetrabutylammonium bromide, 7103
tin(II) triflate and lanthanum perchlorate as promoters of the β-selective glycosylation with α-mannosyl fluorides, 7797
tin(IV) enolates, synth from allylic *O*-stannyl ketyls, reactions with alkyl halides and HMPA, 559
tin(IV)chloride as catalyst for reaction of hexahydro-1,3,5-triazines with alkyldiazoacetates, synth of aziridine-2-carboxylates, 7069
tri-*n*-butyltin cuprate, application in sugar

chemistry, 3063
2-tributylstannyl tetrahydrofurans, ozonolysis to form γ-butyrolactones, 9115
tributylstannyl 4-tributylstannylbut-3-enoate, Pd-catalyzed coupling with aryl halides, synth of γ-aryl-β-iodo-γ-lactones, 7507
tributylstannylmethyl allylic ether bearing an alkoxy function on the side chain, Still-Wittig rearrangement of, synth of *Z*-disubstituted olefins, 389
o-tributylstannylmethyl benzaldehyde, reaction with zinc in the presence of TMSCl and 2,6-lutidine, synth of α-trimethylsiloxy-*o*-quinodimethanes, 8891
O-tributylstannylmethyl sugar derivs, building blocks for tethered reactions, 4211
β-tributylstannylpyrrole, coupling reaction with aryl and heteroaryl halides, synth of β-aryl and heteroarylpyrroles, 3247
triisopropyl α-(trimethylsilyloxy)propargyl stannanes, synth by reaction of acetyl(triisopropyl)-stannane with alkynyllithium reagents, 437

Titanium and compds
alka-1,3-dien-2-yltitanium compds, synth from alka-2,3-dienyl carbonates, subsequent reactions with H^+ and I_2 to provide 1,3-dienes and 2-iodo-1,3-dienes, 8865
(3-bromo-4-pyridyl)triisopropoxytitanium, reaction with *N*-benzylindole-2,3-dicarboxylic anhydride, synth of 2-(3-bromoisonicotinoyl)-indole-3-carboxylic acid which could be converted to ellipticine, 7753
η^3-allyltitanium(III) complexes generated *in situ* from dienes, reaction with dimethylcarbamoyl chloride provides *N,N*-dimethyl tertiary amides, 33
anhydrous titanium trichloride in dichloromethane as mediator for coupling of aromatic aldehydes to d,l-hydrobenzoins, synth of pinacols, 3035
binaphthol-derived chiral titanium complex as catalyst for asymmetric carbonyl-ene reaction with alkynylogous and vinylogous glyoxylates, 8515
chiral synth of 2,2,4-trisubstituted tetrahydrofurans *via* titanium imide enolates, 5657, corrig. 6821
dimethyltitanocene for conversion of 1,3-dioxan-4-ones into 4-methylene-1,3-dioxans, 141
low valent titanium reagent prepared by reduction of $TiCl_4$, subsequent reaction with imines leads to imidazolidine derivs, 4767
propargyl ether Ti complexes, conversion into 2-(1-alkoxyalkyl) alk-2-enols, 7275
Ti(OPr-*i*)$_4$/2*i*-PrMgCl reagent as mediator of tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions of olefinic esters, 1849, corrig. 6959
titania-cyclopentenes, generation and reactions of bicyclic examples with allyl-Ti moieties, 1253
titanocene and zirconocene promoted cyclizations of allyl propargyl ethers, synth of 3-alkylidenetetrahydrofurans, 9059

Toxins
(±)-aflatoxin B_2, synth of precursor using Rh-carbenoid cycloaddition, 2391
4β-anilino-4′-demethylepipodophyllotoxins, synth by employing $Bu_4N^+I^-$ in the displacement of the 4-bromoepipodophyllotoxin, 3359
beticolin 0, spectra, structure, X-ray, 3121
brevetoxins, synth of oxepanes present in brevetoxins by acetal cleavage of 6,8-dioxabicyclo-[3.2.1]octanes, 339
construction of two vic-diol moieties in approach to AAL toxins, 6169
coronafacic acid, carboxylic acid component of the plant toxin coronatine, synth of the hydrindane framework from unsaturated esters involving intramolecular 1,6-conjugate addition, 6745
(+)-epiepoxydon and (−)-phyllostine, naturally occurring polyoxygenated cyclohexenemethanols with phytotoxic, antibiotic, antitumour and antigermination activities, synth, 499
hemibrevetoxin B, neurotoxin produced by *Gymnodium breve*, synth based on double rearrangement-ring expansion of a 6,6-membered ether to a 7,7-membered ether and cyclisation of a hydroxy styryl epoxide, 6365
hemibrevetoxin B, synth of C ring and CD ring system, 217
homoepibatidine and bishomoepibatidine, synth, 3911
homopumiliotoxin alkaloids, quinolizidine based diene alkaloids, synth of the core unit by reductive cyclisation of a 1,1-dibromoalkene to an acetylene, 7151
latrunculin A and laulimalide, macrolide marine sponge −, structure and absolute configuration, 159
C5-C9 portion of maitotoxin, configuration and conformation by long-range ^{13}C-^1H coupling constants, 1269
nephilatoxin 1–6, polyamine toxin from *Nephila clavata*, synth of the 6-hydroxyindole-3-acetic

acid subunit of, 7099
nodularin, hepato–, synth of analogues, 6915
nostocyclin, 3-amino-6-hydroxy-2-piperidone-containing cyclic peptide from hepatoxic strain of cyanobacterium *Nostoc* sp., structure and biological activity, 6725
NSTX-3, polyamine amide spider toxin and glutamate receptor antagonist from *Nephila clavata* orb-web spider, total synth allowing putreanine moiety to be incorporated first, 551
philanthotoxin-343 and sFTX-3.3, synth involving use of 2-chlorotrityl chloride resin and Dde as selective and orthogonal primary amine protecting groups, 2626
pinnatoxin A and D, macrocyclic toxins isolated from *Pinna muricata*, isolation and structure, 4023, 4027
(−)-podophyllotoxin, asymmetric synth through conjugate addition of *S* (−)-benzyl phenyl sulfoxide to but-2-en-4-olide, 4791
podophyllotoxin, synth by conjugate addition-alkylation of 5*H*-furan-2-one followed by cyclisation and epimerisation, 2663
spirolides A to F from the digestive glands of shellfish, identification of the spirolide pharmacophore, 7671
(−)-tetrodotoxin, synth of a cyclohexane intermediate to the tetrodotoxin skeleton by electrocyclisation of triene derivs, 8199
yessotoxin, a polyether compd implicated in diarrhetic shellfish poisoning, absolute configuration by NMR with a chiral anisotropic reagent, 7087
yessotoxin (YTX), causative toxin of diarrhetic shellfish poisoning, relative configuration of and isolation of two new analogues 45-hydroxyYTX and 45,46,47-trinorYTX from infested scallops *Patinopecten yessoensis*, 5955
zooxanthellatoxin A, absolute configuration of spiroacetal portion, 7267
zooxanthellatoxins, synth of C11-C18 portion of C_{25} acid fragment, stereochemistry, 3153

Trans-acetalisation/acylation
see Transfer reactions

Transannular reactions
intramolecular cyclizations of some 3-arenesulfonyl cycloalkanol derivs, 6827
iodine-induced – coupling of 1,6-cyclodecadiyne, 1571

Transesterification
acyl migrations in a glycophane (cyclodextrin-cyclophane hybrid), 5011
in aryl nucleoside H-phosphonate (phosphite) diesters, new method of internucleotide bond formation, 4561
lipase PS, enantioselection of – in iPr_2O improved by addition of crown thioether, 4991
methyl pheophorbide-*a*, – of 13-ester group ("α-keto ester" in paper), formation of steroid, deoxynucleoside and other derivs, 4945

Transfer reactions
metal-catalyzed diazo – from triflyl azide to amines, synth of aliphatic azides, 6029
proton transfer through a lipid bilayer, synth of a linear bola-amphiphilic octaamine with *N*-adamantylmethyl groups, 6465
transacetalization for synth of tartaramide acetals of allylic aldehydes in DMF, 7197
see also Electron transfer

Transition metals
bimetallic catalysts consisting of group 8-10 and group 6 or 7 metals for hydrogenation of amides, 6749
as catalysts for hydroboration of alkenes and alkynes with pinacolborane, 3283
functionalised transition metal complexes as building blocks for construction of multicomponent systems, 2963

Transmetalation
conjugate addition of α-oxyalkylstannanes *via in situ* transmetalation using catalytic CuCN, 3811

Trapping reactions
– of axial-2-lithio-1,3-diselenanes by D^+ and PhCHO, 8015
chemical trapping of 3,7-dimethyltricyclo[3.3.0.$0^{3,7}$]oct-1(5)-ene, 8601, 8605
Claisen rearrangement of allyl phenyl ether with – of phenol produced by methylation, 7889
1,2-didehydro-*o*-carborane, generation by thermolysis of benzene adduct, – as naphthalene adduct, 7217
3,4-didehydro-2,2,6,8-tetramethyl-2*H*-[1]benzopyran, – by furan, 1313
4,5-dimethyleneisothiazoles, generation and – by *N*-phenylmaleimide and DMAD, 4189
generation and trapping of *N*-substituted-3-azetidinylidenecarbenes formed in reaction of *N*-tosyl- and *N*-benzhydrylazetidin-3-one with diethyl diazomethylphosphonate, 8101
trapping of 1,4-diradical intermediates formed in the intramolecular [2+2] photocycloaddition of alkene-enones photosubstrates, 8941
trapping of perepoxide intermediate formed in the photooxidation of adamantylideneadamant-

ane by sulfenate and sulfinate esters, 2911

Triazines

6-amino-1,3,5-triazine-2,4-dione derivs, by-products of amidinourea synth, 1937

3-chloro- and 3-methylthio-1,2,4–, conversion into 3-aminopyridazines by ANRORC reactions using C-nucleophiles, 5795

hexahydro-1,3,5-triazines, reaction with alkyl-diazoacetates in the presence of tin(IV) chloride, synth of aziridine-2-carboxylates, 7069

3-iminohexahydro-1,2,4-triazin-6-one, formation by ring-expansion of 1,3-di-t-butylaziridinone with thiosemicarbazide, 8695

Triazoles

N-acyl 1,2,4–, Wittig reactions with stabilized phosphoranes, synth of β-acyl- (carboxy-)vinyl –, 7249

N-Boc-aminobenzotriazole, double deprotonation of, prep of new aminobenzotriazoles suitable for generation of substituted benzynes, 5615

tris(benzotriazol-1-yl)methyl anion, reaction with nitroarenes and subsequent treatment with zinc bromide and hydrochloric acid yields *p*-nitroarylaldehydes, 347

α-(benzotriazolyl)methyl phenyl thioethers, synth and use for the phenylthiomethylation of trimethylsilyl cyanide, trimethylallylsilane and trimethylsilyl enol ethers to substituted thioethers and β-phenylthioalkylketones, 6631

2-cyanoethoxy-(*N,N*-diisopropylamino)-3-nitro-1,2,4-triazolylphosphine, synth as a new phosphitylating reagent for generation of deoxyribonucleoside phosphoramidites, 331

4,5-dihydro-1,2,3-triazole 2-oxides, synth by thermolysis of 1,2-bis(*N*-methoxy-*N*-nitrosoamino)cycloalkanes, 5997

4*H*-[1,2,3]triazolo[4,5-*c*][1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivs, synth *via* intramolecular cyclisation of *N*-nitroso and azido groups, 8577

Trienes

benzobicyclo[2.2.2]octatrienes bearing an electron-withdrawing group on one of the olefin moieties, effect of substituent on facial selectivity toward oxidative electrophiles, 2609

cascade carboalumination of 2-alkyl dienes and related trienes with Ti(IV) catalysis, synth of bicycloalkylmethyl alanes, 3803

chlorotrienes, functionalized, synth from propargylic alcohols *via* Pd-catalyzed rearrangement of allylic acetates, 6547

1,2,3-cyclooctatriene, generation and trapping, strain calculations, 4907

dicarboxylic ester-tethered trienes, synth and intramolecular Diels-Alder reactions of, formation of medium-ring diolides, 535

electrocyclisation of – derivs in synth of a chiral cyclohexane intermediate to the (–)-tetrodotoxin skeleton, 8199

enzymic resolution of hydroxymethyl cycloheptatriene $Cr(CO)_3$ complexes, [6+4] photocycloadditions to dienes, synth of chiral bicyclo-[4.4.1]undeca-2,4,8-triene systems, 5293

functionalised (*E,E,E*)-cyclododeca-1,6,8-triene, Diels-Alder reaction of as key step in diastereoselective synth of the *trans-anti-cis*-decahydro-*as*-indacene ring system, 8065

NLO chromophores containing cyclic-locked, conjugated triene segment, synth, 7055

1,3,8- and 1,3,9-– in reductive carbocyclizations catalyzed by $Co(acac)_3/AlEt_2Cl/PPh_3$, 2749

trienic cyclopentane derivs, synth by electrocyclic opening of dibromocyclopropane derivs containing a tethered diene unit, 439

Triols

by hydroxyl-directed reductive ring opening of functionalised 2-aryloxetanes at the C-2 position, 4363

cyclohex-5-ene-1,2,4-triol 1,2-disilyl ethers, synth from *meso*-4,5-epoxycyclohexane-1,2-diol disilyl ethers, 8057

syn, syn and *anti, anti* 2,4-dimethylpentane-1,3,5-triols, asymmetric acylation using lipase from *Pseudomonas fluorescens*, 2773

(1′*S*,2*R*,3*R*,4*R*,5*S*)-2-(1′-hydroxy-2′-propenyl)-piperidine-3,4,5-triol (deoxynojirimycin analogue), synth from castanospermine as inhibitor of glycosidases, 8573

Troponoids

dibenzo[*a,e*]tropone, conversion into 5-amino-5-carbonitrile and thence into 10,11-dihydro-5,10-imine derivs, 8655

2-substituted furotropones, synth by reaction of alkynyl(phenyl)iodonium tetrafluoroborates with tropolones, 5539

Tropylium ions

aryl –, synth by photoinduced and thermal electron transfer from the arylcycloheptatrienes, 7493

2-(2-furyl)phenyl –, generation and intramolecular rearrangement, formation of β-(10-benz[*a*]-azulenyl)-αβ-unsaturated ketones, 4965

Tungsten and compds

tetrahydrofuran-tungsten pentacarbonyl, reaction

with 1-alkyn-5-ols, cyclisation to the corresponding tungsten dihydropyranylidene carbenes and subsequent conversion into α-stannyl dihydropyrans, 4675
WO_4^{2-}-exchanged LDH as catalyst for epoxidation of simple olefins and allylic alcohols, 8557

Ugi reactions
1-isocyanocyclohexene in four-component condensations on polymer support, involvement of münchnone (mesoionic oxazol-5-one) intermediate, 1149
Ullmann reactions
gossypol, asymmetric synth of hexamethyl ether by –, 791
Ultrasound and Ultrasound effects
see Sonochemistry
Ultraviolet spectra
see Electronic spectra
Uracils
barbituric acid-5-spiro-4-quinazoline system, synth, 3849
epoxidation of – catalysed by dimethyldioxirane-Mn(Cℓ16)TDMPPCl porphyrin, 2647
1-ethoxymethyl-5-nitro-6-substituted uracils as potential HIV-1 RT inhibitors, synth involving displacement of a 6-methylthio or a 6-tosyl group by nucleophiles by addition-elimination mechanism, 1031
5-formyluracil-containing oligonucleotides, synth, properties, 9067
5-halouracil-containing oligonucleotides, photoirradiation of, evidence for intrastrand C2′-hydrogen abstraction by using stereospecifically C2′-deuterated deoxyadenosine, 1805
solid-phase synth of 5,6-dihydro–, 5277
6-tertiary amino uracils, reaction with dimethyl acetylenedicarboxylate, synth of 4,5-dihydropyrrolo[2,3-*d*]pyrimidine and 4,5,6,7,8-pentahydropyrrolizino[2,3-*d*]pyrimidine analogues, 1853
uracil polyoxin C, synth from uridine, 163
1-vinylthymine, conversion into 4′-aza-2′,3′-dideoxythymidines, isoxazolidine-derived azanucleosides, 1277
Ureas
amidinoureas, synth from *N*-aminocarbonylisothiourea derivatives, 1945
bis-phenylureas derived from *cis*-1,5-dipropyl-1,2,3,4,5,6,7,8-octahydroanthracene-1,5-diamine, synth and association constants with dicarboxylate salts, 2795
chiral hydroxyurea as an inhibitor of 5-lipoxygenase, synth by addition of dimethylsulfoxonium ylid to a nitrone bearing a mannose-derived auxiliary, construction of dihydrobenzofuran skeleton by cyclisation, 4639
diethylenetri-(imidazolidin-2-one) deriv, cyclic urea trimer, synth as a nonnatural biopolymer scaffold, 5309
investigation of proximity effect induced on a carboxylate by a urea binding site positioned near an electrophilic centre, 101
N-aryl-*N*′-methoxy–, oxidative cyclization by $PhI(OCOCF_3)_2$ forming 1-methoxybenzimidazolin-2-ones, 2361
oligo– with polypeptide like structures, synth on solid phase, 5305
solid-phase synth of bis-ureas from oxime resin-derived carbamates of diisocyanates by sequential amine addition, 8141
urea-linked β-cyclodextrin dimers by transformation of 6-monoazido-6-monodeoxy-β-cyclodextrins *via* phosphinimines, 4011
Urethanes
urethane *N*-carboxyanhydrides, reaction with lithium enolate of ethyl acetate, synth of *N*-protected γ-amino-β-keto-esters, 8489
N-urethane protected-3,5-dialkyl-3-amino pyrrolidine-2,4-diones from urethane *N*-carboxyanhydrides in the presence of a base, 1027
urethano-, amido- and sulfonamido-[60]fullerenes by nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene, 4683
Uridines
2′-deoxy-5-ethyl-4′-thiouridine, potent anti-Herpes virus agent, synth using acyl carbamate directing groups, 1867
oligonucleotides containing 2′-azido- and 2′-amino-2′-deoxyuridine, synth using phosphotriester chemistry, 3227
oligonucleotides containing 2′-methoxyoxalamido-2′-deoxyuridine, synth and use a precursor for introduction of various functional additives, 3231

Vaccines
cocaine-diamide hapten, design and synth as an anti-cocaine immune response for the treatment of cocaine abuse, 5479
Valence equilibria
14c,14d-dihydro-14c,14d-dimethyldibenzo[*e,l*]pyrene, synth and reversible photo-isomerisation to a tetrabenzo[*ab,d,fg,i*][10]annulene, 5239

3,4-homotropilidenes, valence tautomerism of chiral examples, 7303
Vanadium and compds
vanadium(II) complex as mediator for allylation of carbonyl compds with allyl bromide, 7083
Vilsmeier reactions/reagents
2-aminobenzoic (anthranilic) acid, dimerization under −conditions, *N,N*-dimethyl-2-(quinazolin-4-on-3-yl)benzamide, 5015
N-aryl − reagents, umpolung using Hünig's base, synth of isatins, 9381
cyclodextrins *via* the per-6-bromo-6-deoxy-CD, perfacial functionalisation of α, β and γCD employing a Vilsmeier-Haack reagent, 4647
formylation of *N*-(4-tolyl)pyrrolidine, -piperidine and -perhydroazepine, examples of the t-amino effect, 2679
of 3,3,3-trifluoropropanoic acid, synth of the β-trifluoromethyl vinamidinium salt 1,1,5,5-tetramethyl-1,5-diaza-3-(trifluoromethyl)-1,3-pentadienium chloride, 1829
Vinylation
of aryl iodides using homogeneous $Pt(COD)Cl_2$/PPh_3 as catalyst, 8917
direct − of 2-substituted *N*-(benzylidene)glycinonitriles, synth of α-vinyl substituted nitriles, 8909
tricyanovinylation of imdazole-thiophenes by reaction of tetracyanoethylene with the thienyllithium of imidazole, 7331
Viologens
charge transfer interaction between bipyridinium and naphthyl groups in optically active species in water, 3149
Viruses
influenza − sialidase inhibitor GG167, synth of analogues, 6595
Vitamins
D, 19-fluorovitamin D, synth by fluorination of vitamin D-sulfur dioxide adducts followed by desulfonylation and isomerisation, 6753
D, 1α-hydroxyvitamin D, synth of a ring A precursor from 3-(triphenylsilyl)glycidol and malic acid, 5589
D_3, analogues with homo-ring-D structures, synth, 9361
D_3, synth of A-ring precursors for 19-nor-1α,25-dihydroxyvitamin D_3 analogues, 7637
D_3, synth of CD-ring/side-chain fragment, 7657

Wacker reactions
− aminocarbonylation of unsaturated amides, synth of pyrrolidinylacetic esters, 2-oxooxazolidin-4-ylacetic esters, fused dihydropyrimidine-2,4-diones, 7287
Wadsworth-Emmons reactions
reinvestigation of the Wadsworth-Emmons reaction involving lithium difluoromethylenephosphonate, 5881
Wadsworth-Horner-Emmons reactions
see Emmons-Horner-Wadsworth reactions
Water, reactions in
see Solvents and solvent effects
Wittig reactions
N-acylazoles, − with stabilized phosphoranes, synth of β-acyl- (carboxy-)vinyl azoles, 7249
5-alkylidene-3-methyl-3-pyrrolin-2-ones, (*E*)- and (*Z*)- forms, synth using − and Horner reactions, 5809
aza-Wittig reaction of iminophosphorane derived from 3-aminopyrazine-2-carboxylic acid and α-amino acid esters, synth of pyrazino[2,3-*e*][1,4]-diazepine derivs, 81
aza-Wittig reaction of *N*-vinylic phosphazenes with carbonyl compds, synth of dihydropyridines and pyridines, 6379
aza-Wittig reactions for prep of β-ferrocenyl-vinylheterocumulenes and ferrocene-containing imidazole rings from β-ferrocenylvinyliminophosphoranes, 7829
C-disaccharides with CH=CH and CH_2CH_2 inter-ring links, synth by −, 7587
double − with 4-carboxybutylidene triphenylphosphorane as key step in synth of benzene derivs metasubstituted with ω,ω'-difunctionalised six-carbon chains, 1393
of monoformyl-tris-(*p*-Bu^t)calix[4]arene, reaction with phosphonium salts of 6-bromomethyl-6'-methyl-2,2'-bipyridine and 2-chloromethylpyridine, synth of conjugated bipyridyl and pyridyl podands, 6311
silica gel catalysis of − with stabilised P ylids, 1281
stereoselectivity arising from charge interaction in synth of carbacyclin analogues, 4141
stereospecific synth of (*Z*)- and (*E*)-stilbenes by crown ether catalyzed − in solid-liquid two phase system, 4225
storable powder mixtures of phosphonium salts and KH, use as "instant ylids", 9047
to establish the stereochemistry of the C(3-4) alkene in synth of curacin A, 953
Wittig condensation of C-4 thiazole phosphonium methylides, synth of 2,4-disubstituted thiazoles, 983

Wittig rearrangements
see Rearrangements

X-ray crystal structures
1-(4-acetylphenylpiperazinium9,10-dihydro-9,10-ethenoanthracen-11-yloxyacetate, salt transferring triplet energy from cation to anion, 6037
adducts of two benzyne molecules to furan-acetone cyclophane hexamer by *anti* addition to 1,3- and 1,4-related furan rings, 6201, 6205
Ag(I) complexes of polyaza macrocycles containing the piperazine ring as a semi-flexible moiety, 7111
13-amino[2.2]paracyclophane-4-carboxylic acid (no details), 1273
1-anisyl-2-hydroxy-2-methyl-4-phenylazetidin-2-one (no details), 6495
anthracene-1,8-dicarboxylic acid, 3-camphorsulfonyloxy-2,4a:7,10a-diepoxy-2,4,5,7,10-pentamethyl-9-oxo-1,2,3,4,4a,7,8,8a,9,9a,10,10a-dodecahydro–, diethyl ester, 4149
apian-8-en-(22,6)-olide, 14-hydroxy-7-methoxy-11,16-dioxo-, 4213
4-aryl-2,3-dihydropyrrole, 3947
aza-analogues of Asp-Pro and Ala-Pro; Z-AzAsp(OEt)-Pro-NH^{i}Pr, Z-AzAsn(Me)-Pro-NH^{i}Pr, and Boc-AzAla-Pro-NH^{i}Pr(no details), 183
bafilomycin A^{1} and its dihydroxypyran fragmentation product (no details), 9001
benz[*a*]anthracene-6,6(5*H*)-dicarboxylic acid, 11-acetoxy-7,12-dioxo-7,12-dihydro-, diethyl ester, 7615
4-benzenesulfonyl-*N*-benzyl-2-phenylselenobuta-1,3-dienamine (no details), 4161
1,2-benzisothiazol-3(2*H*)-one, 2-phenethyl and 2-*p*-anisyl (no details), 5337
2-benzopyran-1-one, 8a-benzyl-3-methyl-8-phenyl-3,4,6,7,8,8a-hexahydro-, 6511
2,1λ^{5}-benzoxaphospholine,1-t-butyl-1-[2-(α-hydroxyperfluoroisopropyl)phenyl]-3,3-bis(trifluoromethyl)-, and its MeCN solvate, showing difference in H-bonding, 8409
beticolin 0, heptacyclic fungal toxin, 3121
1,1-bi(cyclopentadiene, 4,4′-diiodo-5,5,5′5′-tetramethyl-2,2′3,3′tetraphenyl (two conformers), 2983
1,1′-binaphthyl-substituted α-aminoisobutyric acid, 2971
1,3-bis(3,5-dicarboxyphenyloxymethyl)benzene, 2327
bishomohexaprismanedione, 3239
1,1-bistrimethylsilyl-2-phenyl-2-trimethylsilyloxy silene adducts with cyclopentadiene and penta-1,3-diene, 2491
bridged calix[6]arenes bearing a bromide functionality in the cavity, 4039
1-bromo-4-t-butyl-2,6-bis[2,6-bis(dimethylphenyl)benzyl]benzene, bromo-arene with halogen in bowl-shaped cavity, 3141
(±)-2-bromo-5-hydroxy-10-oxatetracyclo[5.2.1.$1^{3,9}$.$0^{4,8}$]undecane (no details), 205
N-t-butoxycarbonyl-2,3-methanopiperidine-2-carboxylic acid (2,3-methanopipecolic acid) (no details), 4529
3-t-butylindene ozonide dimer containing central 1,2,4,6,7,9-hexoxecane ring, 2093
N-(*o*-t-butylphenyl)-*N*-methoxyethyloxymethyl 3-hydroxy-2-methyl-3-phenylpropionamide, 7607
calix[4]arene-calix[4]pyrrole linked by four CH_2O groups, cylindrical pseudo dimer, 7881
(1,2)-calix[5]crown ether, 1497
calix[4]arene, 4-tetra-t-butyl-1^{A},1^{B}-di(2-picolyloxy-)1^{C},1^{D}-(1,4,7,10,13-pentaoxatridecanediyl)-, 3907
(2,7-)calix[3]indole, 3-*p*-chlorophenyl-4,6-dimethoxy-(bridge)-t-butoxycarbonyl-, cone-shaped with EtOH inclusion, 241
(+)-*trans*-camphenesulfonamide, 3267
[8]-*m*-carboranophane (no details), 7221
castanospermine and australine analogues, 49
(+)-cavicularin, cyclic bibenzyldihydrophenanthrene deriv from *Cavicularia densa*, 4745
chiral sulfoximine/Pd-complex, 3985
O-(*p*-chlorobenzimidoyl) *p*-chlorobenzamidoxime, 3113
chrysene 5,6:4b,10b:11,12-trioxide (no details), 8671
η^{4}-cinnamylidene-*p*-anisidine-tricarbonyl iron complexes, 6543
clusianone methyl ether, $C_{34}H_{44}O_4$, polyisoprenylated benzophenone, 6427
complex of 10-(4-t-butylphenyl)-3-(2-ethylphenyl)pyrimido[4,5-*b*]quinoline-2,4(3*H*,10*H*)-dione with urea and ethanol, 8905
complex of a ring-opened compd from cyclotheonamide A with human α-thrombin, 3667
(18-crown-6)$_2$(CuCl$_2$)$_4$(H$_2$O)$_2$ coordination complex, 1633
(2-cyanophenylimino)-[2-oxo-1-(triphenylphosphanylidene)propyldithio]-acetonitrile, 869
[8]cyclacene belt, $C_{56}H_{72}O_4$, with four disordered hexyl substituents, four keto groups, two aromatic rings and two double bonds, 1983

1-cyclohexyl-2-dibenzylamino-6-methylheptane-3,4-diol (no details), 1961
decacyclene (diacenaphtho[*j,l*]fluoranthene), hexa-t-butyl-, unsymmetrical conformation attrib. to crystal forces, 8371
diastereomeric diphosphine prepared by addition of diphenylphosphine-borane complex on an activated diene prepared from mannitol, 4713
[3-dibenzylamino-1-methyl-2-oxo-(and-hydroxy-) 4-phenylbutyl]diphenylphosphine oxides, 4271
1,2-didehydro-*o*-carborane-1,4-benzene adduct (no details), 7217
N,N-diethyl-(2-formyl and 2-propionyl)-1-phenylcyclopropanecarboxamides (no details), 221
4,5-dihydro-1,2,3-triazole 2-oxides, 5997
(10*R*,11*R*)-10,11-dihydroxy-10,11-dihydro-5-phenyl-5*H*-dibenzo[*b,f*]phosphepin 5-oxide, 5609
6,13-diisopropylidenetricyclo[9.3.0^{1,11}.0^{4,8}]tetradeca-1(14),4,7,11-tetraene, 2517
5,12:6,11-dimethanonaphtho[2,3-*g*]phthalazine, 1,4-diphenyl-5,5a,6,11,11a,12-hexahydro-, 4491
6,6′-dimethoxybiphenyl-2,2′-diamine, di-*O*-(anilinocarbonyl)tartaric acid salt, 5343
4,5-dimethyl-3,6-diphenylmorpholin-2-one, 8223
6,6′-dimethylbiphenyl 2,2′-diphosphines, P with Ph, cyclohexyl, t-butyl substituents (several examples, data deposited), 5347
8,8-dimethyl-2,6-diphenyl-3,5-diazabicyclo[5.1.0] octa-2,5-diene-4,4-dicarbonitrile, 1587
3-[3-(2,6-dimethylphenyl)-4-methylpentanoyl]-4-phenyloxazolidin-2-one (stereoview; few details), 7817
2,6-dimethyl-9-phenyl-9-phosphabicyclo[3.3.1]-nonane borane complex (no details), 7565
2,5-dioxa-13-azabicyclo[8.3.0]tridec-1(13)-ene-3-carboxylic acid, 10-methyl-4-oxo-, *p*-nitrobenzyl ester, 8035
2,7-dioxabicycloheptane-1-carboxylic acid, 5-hydroxy-3-(1-hydroxy-2-tosyloxyethyl)-, methyl ester, 3545
1,2-dioxolan fragmentation product of A-ring of steroidal sulfone, 6409
1,3-dioxolan, 2,2-dimethyl-4-(2,3,3-trimethyl-2-nitrocyclopropyl)-, 6307
3-(diphenylmethylene)-2-(phenylimino)oxetane, 917
1,3-dithiolo[4,5-*b*][1,4]dithiin-2-thiones, 5,6-dihydro-5-phenyl- and -5,6-diphenyl-, 7603
erinacines E, 7399
bis(*β*-ferrocenylvinyl)carbodiimide, 7829
(1*S*,6*S*,7*R*,8*R*,8a*R*)-1-(2′-fluoroethyl)-1,5,6,7,8,8a-hexahydro-6,7,8-trihydroxy-3*H*-furo[3,4-*a*]-pyridin-3-one, 8573
7-*cis*-8-fluororetinal, conformation in solid state, 4103
furan-2(5*H*)-one, 5-(*β*-phenylethylidene)-3-(*β*-phenylpropionyloxy)-4-trimethylsilyl- (few details), 7541
[1$_4$](2,5)furanophane, dodecamethyl-, cyclic hexamer of furan and acetone, 4593
(−)-halicyclamine B, 9151
Horner-Wittig products from reaction of (*E*)-5,5′-dimesitylbifuranylidenedione, 9255
1-(3-hydroxy-4-hydroxymethylthietan-2-yl)thymine (no details), 7569
3(*S*,2*R*)-3-hydroxyproline ethyl ester, 5441
imidazo[1,2-*d*][1,4]benzoxazepin-3(11b*H*)-one, 5,6-dihydro-9-methoxy-2-(3-methoxyphenoxyethylamino)-11b-methyl-, 4275
imidazo[1,2-*c*][1,2,4]triazin-4-one, mesomeric betaine ribosylated at N-2, 901
γ-lactam related to penicillins and cephalosporins, 5601
latrunculin A and laulimalide, macrolide marine toxins, 159
linear koilate obtained by self-assembly of linear koilands and hexadiyne, 1401
medium-size monocyclic diamines based on a 1,6-diazacyclodecane core and bearing either nitrophenyl acceptor and methoxyphenyl donor groups or two donor or acceptor groups, 4721
7-mesylpaclitaxel, 3425
3-[(1-methylcyclopropyl)(phenyl)methylene]-phthalide (few details), 7521
2-methyl-5-isopropylcyclohexane-spiro-3-(1,5,6,10b-tetrahydro-3*H*-thiazolo[4,3-*a*]isoquinoline-10b-carboxylic acid, 8-benzyloxy-9-methoxy-, methyl ester (no details), 7163
(*S,S*)-1-methyl-2-oxo-3-(2-phthalimidopropionyl)imidazolidine-4-carboxylic acid, t-butyl ester, 4957
bis(tris(methylthio)tetrathiafulvalenyl)disulfide, 5115
2-methyl-5-(*p*-tolylmethyl)oxazole-4-carboxylic acid, 861
molecular sheets of 1,2-bis(2′-tetrahydropyrimidyl)ethane and dihydrogenopyrophosphate ribbons interconnected through $H_2P_2O_7^{2-}$ anions by hydrogen bonds, 1405
molrac internally functionalised with succinimide bridges, 3773
non-planar *meso*-tetraphenyl porphyrins with progressive ethyl substitution on pyrrole rings (some details), 1183

norkaurenoid lactone, 8937
nudenoic acid, sesquiterpenoid with 2,6-dimethyltricyclo[7.2.1.$0^{1,6}$]dodec-7-ene-8-carboxylic acid structure, 9307
2,2a,3,4,5,7,8,8a-octahydro-4,7-diphenyl-1*H*-5,8b-diaza-6-azoniaacenaphthene fluoborate triphenylphosphine oxide complex, 6943
4-oxa-2,6-diazatetracyclo[5.4.2.$0^{1,5}$.$0^{8,11}$]trideca-2,5-diene-10,12-dicarbonitrile, 3-methyl-, 5783
oxiran, 2-n-butyl-1-(1-hydroxypropyl)-1-*p*-tolylsulfinyl-, *p*-nitrobenzoate, 6793
paucidactine A, heptacyclic indole alkaloid, 3603
perhydrocyclopenta[*a*]naphthalene, 7-*p*-bromobenzoyloxy-3-(1-hydroxy-1-methylethyl)-3a,6,6,9a-tetramethyl, 2709
[4 + 4] photocycloadduct of 4-methoxy-2-pyridone with 1-n-butyl-2-pyridone (no details), 1141
(1,3-bis)phthalimido cavitand, 5167
polyacetyl 1,3-dithiolic deriv, 8861
prop-2-enylidenecyclopentanone η^4-iron tricarbonyl complex (no details), 8763
2-propylenebis-(4-t-butyl and 4-phenyl-2-oxazoline), Cu(II) and Zn(II) complexes (no details), 7481
pyrrolidine-3-carboxylic acid, 1-(α-methylbenzyl)-5-oxo-, 4277
[3]rotaxane and [3]pseudorotaxane with two dibenzo[24]crown-8 mols surrounding tri-*p*-xylylene-diammonium chain end-capped by 4,5-di-t-butoxycarbonyl-1,2,3-triazol-1-yl and azido groups respectively, 6217
ruthenium(CO) porphyrin with *meso*-phenyl groups 2,6-connected by chiral O-CH_2-dimethyldioxolan-CH_2-O links disposed alternately above and below the ring, 7325
silacyclobutan-2-imine fused to norbornane system, 3675
1,10,11,13-tetrachloro-12,12-dimethoxyhexacyclo[8.3.0.$0^{2,9}$.$0^{4,7}$.$0^{5,13}$.$0^{6,11}$]tridecane-3,8-dione, H_2O adduct to one carbonyl group (no details), 8779
1,2,3,4,5,6,6a,7,8,9,10,11,12,12a-tetradecahydrochrysene-5,6,11,12-tetracarboxylic acid dianhydride, 1559
3a,4,5,7a-tetrahydrobenzoxazole deriv, 4059
5,6,7,8-tetrahydronaphthoquinone 6,7-fused to (6.6) bond of [60]fullerene, 7987
4,5,10,11-tetramethylheptacyclo[8.2.1.$1^{2,5}$.$1^{4,7}$.$1^{8,11}$.$0^{1,8}$.$0^{2,7}$]hexadecane, 8601
trans-configured pentaspiro cyclohexanol, 1721
1,3,5-triazine.$2Br_2$ complex, 3505
2-(5-tricyanovinylthienyl)-1-methyl-4,5-di-*p*-tolylimidazole, 7331
tricyclohexylphosphine-trifluoromethanesulfonyl oxyborane and tricyclohexylphosphine-bis(trifluoromethanesulfonyloxy)-borane, 503
tricyclo[5.3.1.$0^{3,8}$]undec-5-ene-5-carboxylic acid, 6-hydroxy-10-isopropenyl-1,3-dimethyl-2-oxo-, methyl ester (no details), 8061
2,4,6-triisopropylthiobenzophenone, 2125
3a,5,5-trimethylperhydrocyclopropa[*f*]benzoxazole-2-thione; 4-phenyl-2-thioxooxazolidine-5-carboxylic acid, ethyl ester (no details), 7315
2,4,6-trioxabicyclo[3.2.0]heptane-7-carboxylic acid, 7-t-butyl-3,3-diisopropyl-, methyl ester, 1195
1,6,8-trioxadispiro[4.1.5.3]pentadecanes, synth from D-galactopyranose, 6021
triple-layered orthonaphtho[3.3]orthobenzeno-[3.3]orthonaphthophane, 65
2,8,17-trithia[$4^{5,12}$][9]metacyclophan-4-ene and *in*-2,8,17-trithia[$4^{5,12}$][9]metacyclophane, 8125
tungsten carbonyl complex of *E*-bis(2,4,6-tri-t-butylphenyl)diphosphene, 7815

Xanthates

S-propargyl xanthates as a source of propargyl radicals, 5495
reductive cleavage of the sulfide bond in xanthates, synth of the corresponding alkane, 5877
secondary alkyl *S*-methyl −, *O*→*S* rearrangement catalyzed by $AlMe_3$, 2695

Xanthenes

9-aminoxanthen-3-yloxymethyl polystyrene, use in synth of resin-bound 1-aminophosphinic acids, 1647
tetra- and hexa-hydroxanthene structures from salicylaldehyde with terpenoid dienes and diene alcohols on askanite-bentonite clay, 6181

Ylids

ammonium ylids formed on reaction of methyl 3,3,3-trifluoro-2-diazopropionate with amines and amides, Stevens rearrangement of yields α-trifluoromethyl-α-amino acids, 615
azomethine − from aldehydes and aminoacids, cycloaddition to C_{60} fullerene, 775
azomethine −, Sm(III) complexes, cycloaddition to αβ-unsaturated esters, synth of 1-pyrrolines, 6573
azomethine ylids, imidate methylids and thioimidate methylids, generation in the presence of electron deficient dipolarophiles gives direct access to spiro-fused pyrrolidines, 5163
3-benzoyl-2,2-dimethyl-5-phenyl-2*H*-pyrrole 1-(di-

cyanomethylide), 1587
carbonyl ylids bearing only alkyl substituents or no substituents, generation from α-chloroalkyl α'-chloroalkyl ethers in the presence of samarium reagents, 9241
dimethylsulfoxonium methylide, stereoselectivity in cyclopropanation forming polycyclopropanes, 8341
dimethylsulfoxonium ylid, addition to a nitrone bearing a mannose-derived auxiliary followed by cyclisation, synth of a 5-LO inhibiting hydroxyurea, 4639
imidazolinium ylids, synth of perhydropyrrolo-[1,2-*a*]imidazoles by 1,3-dipolar cycloadditions, 1707
"instant –", storable powder mixtures of phosphonium salts and KH, 9047
keto ylid substituted L-phenylalanine derivs as stable precursors of a vicinal tricarbonyl moiety, 8475, 8479
N-methoxy azomethine –, generation and (in small yield) trapping by methyl acrylate, 7205
oxonium ylids, synth *via* intramolecular reaction between a series of dioxalanes and metallocarbenes, 5053
6*H*-pyran-3-carboxylates, reaction with arsonium –, formation of vinylcyclopropane and dihydrofuran derivs, 9349
resin bound azomethine ylid, three component 1,3-dipolar cycloaddition of, solid-phase synth of proline analogues, 3671
spirocyclic ammonium ylid intermediates in prep of azacyclooctene and azacyclononene containing substrates, 2165
stable – by $C(CN)_2$ addition to 2,5-diaryl-7,7-dimethyl-3,4-diazanorcaradienes, cycloadditions and rearrangements, 1583, 1587
C-4 thiazole phosphonium methylides, Wittig condensation of, synth of 2,4-disubstituted thiazoles, 983
trifluoromethyl azomethine ylids, synth by heating of *N,N*-dimethyl-bis(methylthio)-*ortho*-trifluoroactamide or by deprotonation of trifluoromethyl thioamidium salts, 5515

Zeolites
chromium silicalite-2 catalyst for t-BuOOH oxidation of benzylic alcohols to aldehydes/ketones, 2067
electron transfer within –, photooxidation of stilbenes, 5235
faujasite Y, charge transfer complexes between methylviologen and aromatic donors within cavity, influence of alkali metal counter cations, 2873
HY, EMT and H beta –, catalysts for aza-Cope rearrangement of *N*-allylanilines, 5281
imidochromium(V) trichloride(dme) catalysis of tosylaziridine ring-opening by trimethylsilyl azide, effect of molecular sieve, 891
Li-exchanged – X and Y, thermal and photochemistry of included 1,4-methano-1,4-dihydronaphthalene (benzonorbornadiene), 5297
molecular sieves promoted dimerisation of free pyranose and furanose sugars, synth of α,α-disaccharides, 6279
photo-Fries reaction of naphthyl esters within zeolites, 6251
photochemistry of ketones in –, role of water, 4861
zeolite-catalysed oxidation of benzylic and acetylenic alcohols with t-butyl hydroperoxide, synth of the corresponding carbonyl compds, 7845
see also Clays and earths, Supported reagents/reactions

Zinc and compds
alkylzincs, reaction with *meso*-2,4-hexadien-1,6-dial $Fe(CO)_3$ complex in the presence of (*S*)-(+)-diphenyl-(1-methylpyrrolidin-2-yl) methanol, synth of (diene)$Fe(CO)_3$ complexes, 3345
alkenylzinc reagents by the reaction of alkenyl tellurides with diethylzinc, subsequent cross-coupling with 4-iodotoluene, 4741
alkenylzincs, reaction with alkenyl iodides in α-alkenylation of enones, prep of nakienone B, a marine natural product, 4679
aryl zinc bromides, coupling to aryl bromides bound to a polystyrene resin, liberation of the biaryl carboxylic ester by transesterification, 5491
conjugate addition of diorganozincs to enones, αβ-unsaturated nitriles, nitroolefins, in *N*-methylpyrrolidone, 4495
diastereoselective allylzincation of δ-mono and γ,δ-disubstituted Z vinyl metals, 5873
diethyl Zn, enantioselective addition to aldehydes catalyzed by thioacyl ephedrine analogues, 8767
diethylzinc addition to aromatic aldehydes promoted by 1,2,3,4-tetrahydro-β-carbolines, 5971
difluoroethenezinc iodide, synth and Pd-catalyzed coupling with aryl iodides, synth of (*Z*)-α,β-difluorostyrenes, 7237

diorganozinc, conjugate addition of to α,β-unsaturated ketones catalysed by a copper(I)-sulfonamide combined system, synth of zinc enolates, 5141
enantioselective addition of Et_2Zn to aldehydes, chiral salen Schiff base catalyst, 4613
iodozinc uracil and purine bases, synth and use in Pd-catalyzed cross-couplings, synth of arylated nucleosides, 8375
organozinc reagent derived from 2-bromobenzaldehyde ethylene ketal, acylation of, approach to BCD and BCDE rings of antitumour antibiotic fredericamycin A, 1367
organozinc reagents for synth of borane protected and free polyfunctional chlorodiorganophosphines, 2209
prep of an aqueous ratiomeric fluorescence probe for Zn(II), 2193
reaction with *o*-tributylstannylmethyl benzaldehyde in the presence of TMSCl and 2,6-lutidine, synth of α-trimethylsiloxy-*o*-quinodimethanes, 8891
synth of linear and angular triquinanes by zinca-ene-allene reactions, 857
zinc powder in aqueous caustic/THF for reduction of C_{60} to C_{60}^- and C_{60}^{2-}, 7409
zinc pyropheophorbide *a* methyl ester, oxidative silylation of with chlorotrimethylsilane, formation of a novel oxygen-bridged dimer, 6395
O-(α-zincovinyl) carbamates, cross-coupling with aryl and heteroaryl halides and triflates, CH_3CO^- equivalent in synthesis, 6057
see also Reformatsky reactions

Zirconium and compds
anhydrous anhydrous $ZrCl_4$ on silica gel as catalyst for thioacetalization, 4621
2,2-difluorovinyl zirconocene, synth and use in cross-couplings, 8799
hydrozirconation of alkyl/aryl alkynyl tellurides, synth of α-telluro-α-zirconated ethylenes and α-telluro-αβ-unsaturated ketones, 7537
7-methoxy to 5-methoxy tetralin rearrangements mediated by $ZrCl_4$, 3607
synth of bicyclo[9.3.0]tetradecane (dolabellane) skeleton using organo-Zr methods, 7661
Zr tetrachloride for room-temperature *ortho*-Fries rearrangements, ultrasound as accelerator, 7659
titanocene and zirconocene promoted cyclizations of allyl propargyl ethers, synth of 3-alkylidenetetrahydrofurans, 9059
zirconacyclization of 1,6-enynes in synth of linear and angular triquinanes, 857
zirconacyclopentenes, conversion into cyclopentadienes, cyclopentenols, 4,5,6,7-tetrahydroindenes, cyclopropanes, 7521
zirconocene dichloride $CpCp'ZrCl_2$ (Cp' = 1-neomenthyl-4,5,6,7-tetrahydroindenyl) as effective, active, cheap and recoverable catalyst for ethylmagnesiation of terminal alkenes, 7139
zirconocene vinylboronate derivative in synth of *rac*-chokol precursor, 2735
zirconocyclization of diallylphosphines, synth of chiral phosphines, 3109

Zwitterions
trimethylenemethane zwitterion equivalent for sequential nucleophilic and electrophilic alkylations of 1,3-dicarbonyl compds leading to [3+2] annulation, 471
see also Betaines, mesomeric

Author Index 1996

Abarbri M. see Thibonnet J. 7507
Abboud K. see Butora G. 8155
Abdallah M. A. see Wong-Lun-Sang S. 3329
Abdaoui M. Dewynter G. and Montero J.-L. Expedient synthesis of 2-chloroethylnitrososulfamides (CENS) via the decarboxylative reopening of sulfamoyloxazolidinones 5695
Abdelaziz S. see Said B. 179
Abdul-Malik N. F. see Davis F. A. 3267
Abdul Malik K. M. see Black G. P. 6943
Abe H. see Suzuki H. 3717
Abe K. see Tsukahara K. 3149
Abe K. see Yano M. 9207
Abe M. Ikeda M. Shirodai Y. and Nojima M. Regio- and stereo-selective formation of 2-siloxy-2-alkoxyoxetanes in the photoreaction of cyclic ketene silyl acetals with 2-naphthaldehyde and their transformation to aldol-type adducts 5901
Abe M. Nojima M. and Oku A. Photoinduced electron transfer reactions of cyclopropanone acetal with conjugated enones in the presence of a redox-type photosensitizer 1833
Abenhaïm D. see Díaz-Ortiz A. 1695
Abiko A. and Masamune S. The asymmetric Horner–Emmons reaction using a benzopyrano-isoxazolidine auxiliary 1077
Abiko A. and Masamune S. Synthesis of (+)-siphonarienone: asymmetric alkylation using a chiral benzopyrano-isoxazolidine auxiliary 1081
About-Jaudet E. see Al-Badri H. 2951
Abraham J. A. see Chen M.-H. 5233
Abraham W. see Jacobi D. 7493
Abramovich Z. see Haddad N. 3521
Abrell L. M. Borgeson B. and Crews P. Chloro polyketides from the cultured fungus (*Aspergillus*) separated from a marine sponge 2331
Abrell L. M. Borgeson B. and Crews P. A new polyketide, secocurvularin, from the salt water culture of a sponge derived fungus 8983
Aceña J. L. de Alba E. Arjona O. and Plumet J. A stereodivergent synthesis of (±)-cyclophellitol and (1*R**,6*S**)-cyclophellitol from the 7-oxabicyclo[2.2.1]hept-5-ene-2-*endo*-carboxylic acid 3043
Aceña J. L. Arjona O. Iradier F. and Plumet J. A convenient approach to the aminocyclitol fragment of pancratistatin from 7-oxanorbornenes 105
Aceña J. L. Arjona O. León M. and Plumet J. Polypropionates from 7-oxanorbornene derivatives. A stereoselective and divergent synthesis of fragments with four contiguous chiral centers 8957
Acevedo O. L. and Andrews R. S. Synthesis of propane-2,3-diol combinatorial monomers 3931
Achab S. A three-component coupling approach to the marine bis-indole alkaloids: topsentin, deoxytopsentin and bromotopsentin 5503
Achari B. see Maiti S. 8061
Achmatowicz B. Jankowski P. and Wicha J. Enantioselective syntheses of a 1α-hydroxyvitamin D ring A precursor from 3-(triphenylsilyl)glycidol and from malic acid 5589
Ackland M. J. Danks T. N. and Howells M. E. Conversion of (1-heterodiene)tricarbonyliron(0) complexes into (2-amino-homodiene)tricarbonyliron(0) complexes 691
Acton, III J. J. and Jones A. B. Synthesis and derivatization of a versatile α-substituted lactam dipeptide isostere 4319
Adachi H. see Hosoya Y. 9227
Adachi M. Sasatani T. Chomei N. and Takada S. Intermolecular transfer of an alkenyl group in enamines: application to synthesis of [*b*]-fused pyridines 8871
Adam P. see Lemoine S. 2837
Adam W. Bottle S. E. Grice I. D. Pfeiler D. and Wentrup C. The cheletropic trapping of nitric oxide by the bis-ketene 1,2-dicarbonylcyclohexa-3,5-diene and the diene 3,4-diphenyl-2,5-dimethyl-2,4-hexadiene 2113
Adam W. Fell R. T. Mock-Knoblauch C. and Saha-Möller C. R. Synthesis of optically active α-hydroxycarbonyl compounds by (salen)Mn(III)-catalyzed oxidation of silyl enol ethers and silyl ketene acetals 6531
Adamczyk M. and Fishpaugh J. R. A solid supported synthesis of thiol esters 4305
Adamczyk M. and Fishpaugh J. R. Expeditious synthesis of Mosher amides using a solid supported carbodiimide 7171
Adamczyk M. and Grote J. *Pseudomonas cepacia* lipase mediated amidation of benzyl esters 7913

Adamczyk M. and Reddy R. E. Preparation of 2-carboxy-3,4-substituted pyrrole haptens and synthesis of porphobilinogen 2325
Adams G. see Bernotas R. C. 7339
Adams G. see Bernotas R. C. 7343
Adger B. Dyer U. Hutton G. and Woods M. Stereospecific synthesis of the anaesthetic levobupivacaine 6399
Adinolfi M. Barone G. De Napoli L. Iadonisi A. and Piccialli G. Solid phase synthesis of oligosaccharides 5007
Adinolfi M. Iadonisi A. and Mangoni L. A direct conversion of aldohexopyranose to ketohexopyranose benzyl derivatives by Meerwein–Ponndorf/Oppenauer reaction induced by air-oxidised samarium diiodide 5987
Adiyaman M. Lawson J. A. Hwang S.-W. Khanapure S. P. FitzGerald G. A. and Rokach J. Total synthesis of a novel isoprostane $IPF_{2\alpha}$-I and its identification in biological fluids 4849
Adiyaman M. see Hwang S.-W. 779
Adjé N. Vogeleisen F. and Uguen D. Improved conditions for the Kiliani–Fischer synthesis 5893
Afarinkia K. Ansari M.-R. Bird C. W. and Gyambibi I. A reinvestigation of the structure of the erythro and xanthoapocyanine dyes: some unusual aspects of quinoline chemistry 4801
Ágai B. see Cseri T. 1473
Agami C. Couty F. and Mathieu H. Cyclization of a chiral oxazolidine as a key-step for the synthesis of functionalized piperidines 4001
Ageta H. see Arai Y. 4381
Aggarwal V. K. and Vennall G. P. Scandium trifluoromethanesulfonate, a novel catalyst for the addition of allyltrimethylsilane to aldehydes 3745
Agosta W. C. see Lu Q. 8629
Agrawal S. see Iyer R. P. 1539
Agrawal S. see Iyer R. P. 1543
Agrios K. see Engler T. A. 327
Agrios K. A. see Hoemann M. Z. 953
Agudelo F. see Paredes R. 1965
Ahiko T. see Ishiyama T. 6889
Åhman J. and Somfai P. A novel rearrangement of *N*-propargyl vinylaziridines. Mechanistic diversity in the aza-[2,3]-Wittig rearrangement 2495
Ahmed S. and Boruah R. C. An efficient conversion of conjugated oximes into substituted pyridines under Vilsmeier conditions 8231
Ahn E. J. see Kang S. B. 9317
Ahn K. H. see Park J. 6137
Ahn S.-J. see Jin M.-J. 8767
Ahn Y.-G. see Ha H.-J. 7069
Ahn Y. H. see Kim K. S. 1249
Ahond A. see Al Mourabit A. 9189
Aida T. see Ito A. 2585
Alguadé J. see González Á. 8949
Aihara H. see Hojo M. 9241
Aimar M. L. and Rossi R. H. One-pot synthesis of 5-alkylthio-3*H*-1,2-dithiole-3-thiones 2137
Aires-de-Sousa J. Lobo A. M. and Prabhakar S. A new enantioselective synthesis of *N*-arylaziridines by phase-transfer catalysis 3183
Aitken D. J. see Besson L. 3307
Aizawa K. see Sato M. 633
Aizpurua J. M[a] see Loupy A. 8177
Ajayaghosh A. and Pillai V. N. R. Photo-triggered selective C-terminal *N*-methylamidative cleavage of polyethyleneglycol-bound peptides 6421
Ajisaka K. see Matsuo I. 8795
Akagi M. see Urata H. 5551
Akahori Y. see Sato I. 5135
Akai S. see Kita Y. 1817
Akai S. see Kita Y. 7369
Akai S. see Kita Y. 7545
Akaji M. see Ibuka T. 2849
Akamatsu H. see Kobayashi K. 2437
Akao K. see Araki K. 73
Akao K. see Ikeda A. 1621
Akhrem I. Churilova I. Bernadyuk S. and Vol'pin M. An effective formylation of adamantane with CO initiated by the aprotic organic superacid CBr_4•$2AlBr_3$ under mild conditions 5775
Akhrem I. see Orlinkov A. 3363
Akiba K. see Kajiyama K. 8409
Akiyama R. see Kobayashi S. 7783
Al-Abed Y. Naz N. Mootoo D. and Voelter W. 4-*O*-TfO-2,3-anhydro-β-L-ribopyranosides as chiron: a formal synthesis of canadensolide 8641
Al-Badri H. About-Jaudet E. and Collignon N. Unusual and efficient (*Z*)-stereoselective Peterson synthesis of 2-diethoxyphosphonyl-1-alkoxy-3-methylpenta-1,3-dienes. Their use in the Diels– Alder reaction 2951
Alajarín M. Molina P. and Vidal A. Intramolecular [2 + 2] cycloaddition of ketenimines with imines 8945
Alami M. Ferri F. and Gaslain Y. A two-step synthesis of terbinafine 57
Alami M. and Ferri F. A convenient route to unsymmetrical conjugated diynes 2763
Alami M. see Ferri F. 7971
Alami M. see Mladenova M. 6547
Alayrac C. Cerreta F. Chapron I. Corbin F. and Metzner P. Thiophilic addition of organolithiums to aliphatic sulfines 4507
Albericio F. see Alsina J. 4195
Albert R. see Said B. 179
Alberti A. see Chatgilialoglu C. 6391
Albrecht P. see Lemoine S. 2837
Alcaide B. Polanco C. and Sierra M. A. Synthesis of fused tricyclic β-lactams by the Pauson–Khand cyclization of enyne-2-azetidinones 6901
Alcaraz L. Macdonald G. Kapfer I. Lewis N. J. and Taylor R. J. K. The first total synthesis of a member of the manumycin family of antibiotics: alisamycin 6619
Al Dulayymi J. R. Baird M. S. Bolesov I. G. Tveresovsky V. and Rubin M. A simple and efficient hydrodehalogenation of 1,1-dihalocyclopropanes 8933
Alewood P. F. see Englebretsen D. R. 8431
Alewood P. F. see Meutermans W. D. F. 4765
Alexakis A. see Raussou S. 1599
Alexander C. W. and Liotta D. C. A diastereoselective synthesis of (2*S*, 3*R*, 4*S*)-2-amino-1-cyclohexyl-6-methylheptane-3,4-diol, the Abbott aminodiol 1961
Allais D. P. see Comte G. 2955

Allanson N. see Chan T. Y. 8097
Allen A. and Anselme J.-P. An unprecedented Favorski-like ring contraction of the 1,3,4-oxadiazinone ring to a bimane 5039
Allen J. V. and Williams J. M. J. Dynamic kinetic resolution with enzyme and palladium combinations 1859
Allin S. M. and Shuttleworth S. J. The preparation and first application of a polymer-supported 'Evans' oxazolidinone 8023
Almaraz M. see Raposo C. 1485
Almaraz M. see Raposo C. 6947
Al Mourabit A. Poujol H. Poupat C. Ahond A. and Potier P. Chemistry of taxoids: one-step functionalization of the positions 1, 2, 9 and 10 from the selectively protected 5-*O*-cinnamoyltaxicine I 9189
Alonso F. and Yus M. Hydrogenation of olefins with hydrated nickel chloride, lithium and a catalytic amount of naphthalene 6925
Alonso I. Khiar N. and Martín-Lomas M. A new promoter system for the sulfoxide glycosylation reaction 1477
Alonso M. Á. see Pérez J. M. 6955
Aloui M. see Kartha K. P. R. 5175
Aloui M. see Kartha K. P. R. 8807
Alper H. see Okuro K. 2713
Alper P. B. Hung S.-C. and Wong C.-H. Metal catalyzed diazo transfer for the synthesis of azides from amines 6029
Alphand V. Gaggero N. Colonna S. and Furstoss R. Microbiological transformations—XXXV. Enantioselective one-step preparative scale synthesis of 1,3-dithiane-1-oxide via whole-cell bacterial oxidation 6117
Alphand V. see Lebreton J. 1011
Alphand V. see Viazzo P. 4519
Alsina J. Giralt E. and Albericio F. Use of *N*-tritylamino acids and PyAOP for the suppression of diketopiperazine formation in Fmoc/^{t}Bu solid-phase peptide synthesis using alkoxybenzyl ester anchoring linkages 4195
Alvarez E. Delgado M. Díaz M. T. Hanxing L. Pérez R. and Martín J. D. A concise synthesis of *ortho*-condensed oxane–oxene, oxepene, oxocene and oxonene ring systems 2865
Alvarez M. see Roberts D. 1509
Alvarez P. see Ezquerra J. 683
Alvarez P. see Ezquerra J. 5813
Alvarez-Builla J. see Minguez J. M. 4263
Alvarez-Builla J. see Vega J. A. 6413
Álvarez-Gutiérrez J. M. and López-Ortiz F. Synthesis of 1*H*-1,2 λ^5-azaphosphinin-6-ones from *N*-alkoxycarbonyl phosphazenes and DMAD 2841
Alvarez-Ibarra C. Csáky A. G. Martínez M. and Quiroga M. L. Diastereoselective 1,3-dipolar cycloaddition of Sm(III)–azomethine ylides to α,β-unsaturated esters 6573
Alvarez-Larena A. see Ortuño R. M. 4059
Alvarez-Manzaneda E. see Barrero A. F. 3757
Alvaro M. García H. García S. and Fernández L. Charge transfer complexes between methylviologen and aromatic donors within faujasite Y: influence of the alkaline metal counter cations 2873
Alzeer J. Nock N. Wassner G. and Masciadri R. MOM-protected 3-hydroxy-5-phenyl-isoxazole: regioselective preparation and synthetic application 6857
Amade' M. S. see Gandolfi R. 517
Amade' M. S. see Gandolfi R. 1321
Amat M. Bennasar M.-L. Hadida S. Sufi B. A. Zulaica E. and Bosch J. Abnormal Pummerer cyclizations on the indole ring 5217
Amat M. Hadida S. Sathyanarayana S. and Bosch J. A new synthetic entry to the indolo[2,3-*a*]quinolizidine system. Electrophilic cyclizations on the indole ring from 2-(2-piperidyl)indoles 3071
Amato J. S. see Karady S. 8277
Ambroise L. and Jackson R. F. W. Stereoselective synthesis of *anti*-β-amino-α-hydroxy acid derivatives using nucleophilic epoxidation of 1-arylthio-1-nitroalkenes 2311
Ameline G. Vaultier M. and Mortier J. Directed metalation reactions. Intermolecular competition of the carboxylic acid group and various substituents 8175
Amer F. A. see Elmorsy S. S. 2297
Amouroux R. see Burgat Charvillon F. 5103
Amri H. see Dambrin V. 6323
An H. and Cook P. D. Solution phase combinatorial chemistry—I. Synthesis of polyazacyclophane scaffolds and tertiary amine libraries 7233
Andersen C. M. see Mayer J. P. 5633
Andersen M. W. Daluge S. M. Kerremans L. and Herdewijn P. The synthesis of modified D- and L-anhydrohexitol nucleosides 8147
Andersen R. J. see Gerard J. 7201
Andersson P. G. see Bedekar A. V. 4073
Andersson P. G. see Södergren M. J. 7577
Anderton C. A. see Miles W. H. 7893
André F. Marraud M. Boussard G. Didierjean C. and Aubry A. Synthesis and structure of AzAsx–Pro-containing azapeptides 183
André F. see Negriolli J. 5365
Andrés C. Duque-Soladana J. P. Iglesias J. M. and Pedrosa R. Diastereoselective 5-*exo-trig* radical cyclisation on *N*-acryloyl-tetrahydro-1,3-oxazines. A novel approach to enantiopure 3-substituted pyrrolidines 9085
Andrés J. see Domingo L. R. 7573
Andrés L. S. see Luis J. G. 4213
Andreu D. see Valero M.-L. 4229
Andreu R. see Martín N. 5979
Andrews D. M. see Page P. C. B. 2515
Andrews D. R. Giusto R. A. and Sudhakar A. R. A corticoid synthesis from 9α-hydroxyandrost-4-ene-3,17-dione via a steroidal allene 3417
Andrews I. P. Dorgan R. J. J. Harvey T. Hudner J. F. Hussain N. Lathbury D. C. Lewis N. J. Macaulay G. S. Morgan D. O. Stockman R. and White C. R.

A practical synthesis of the milbemycin SB-201561 4811
Andrews R. S. see Acevedo O. L. 3931
Andrievsky A. A. see Garcia M. E. 8313
Andrus M. B. and Argade A. B. Synthesis of octalactin lactone and side chain 5049
Aneja R. Aneja S. G. and Parra A. 1D- and 1L-1,2:4,5-Di-*O*-cyclohexylidene-3-*O*-allyl-*myo*-inositols: complementary versatile new starting materials for syntheses in the 1D-*myo*-inositol series 5081
Aneja S. G. see Aneja R. 5081
Ang K. H. Prager R. H. Smith J. A. Weber B. and Williams C. M. The synthesis of oxazoles by thermolysis or photolysis of 2-acylisoxazol-5-ones 675
Ang K. H. see Ede N. J. 9097
Angelis Y. Zhang X. and Orfanopoulos M. Secondary isotope effects in dioxirane epoxidations. Concerted or step-wise mechanism? 5991
Angell R. see Harwood L. M. 4217
Anies C. Lallemand J.-Y. and Pancrazi A. Metallated α-alkoxypropargyl and γ-alkoxyallenyl derivatives: applications in some aldol reactions towards diterpene synthesis 5519
Anies C. Lallemand J.-Y. and Pancrazi A. SmI_2 in a 6-*exo*-dig radical cyclisation in a synthetic approach to (±)-erigerol 5523
Anilkumar G. see Nair V. 8271
Anke T. see Bertram G. 7955
Anklam S. see Galley G. 6307
Anna L. J. see Marino J. P. 8031
Anné S. see Zhou S.-Z. 7637
Anouna K. G. see Szczepanski S. W. 8841
Ansari M.-R. see Afarinkia K. 4801
Anselme J.-P. see Allen A. 5039
Anslyn E. V. see DeFord J. 1925
Antenori M. see Ravasio N. 3529
Anzalone L. see Zhang L. 4455
Aoe K. see Miyata O. 229
Aoki S. see Ogino T. 7065
Aoyagi S. see Sato M. 9063
Aoyagi S. see Yamada H. 8787
Aoyagi S. see Yamazaki N. 6161
Aoyagi Y. Mizusaki T. and Ohta A. Facile and efficient synthesis of pyrroles and indoles via palladium-catalyzed oxidation of hydroxy-enamines and -amines 9203
Aoyama T. see Takaoka K. 4973
Aoyama T. see Takaoka K. 4977
Aparicio D. see Palacios F. 1289
Apelqvist T. and Wensbo D. Selective removal of the *N*-BOC protective group using silica gel at low pressure 1471
Apodaca R. see Whitesell J. K. 2525
Apodaca R. see Whitesell J. K. 3955
Appendino G. Jakupovic J. Varese M. Belloro E. Danieli B. and Bombardelli E. Synthesis of 7,9-nitrogen-substituted paclitaxel derivatives 7837
Appendino G. Jakupovic J. Varese M. and Bombardelli E. Acid and base catalysed rearrangements of 9,10-dioxotaxanes 727
Appendino G. see Fenoglio I. 3203
Arai N. see Matsumoto M. 8535
Arai S. see Gröger H. 9291
Arai T. see Sasai H. 5561
Arai Y. Hirohara M. Ogawa R. Masuda K. Shiojima K. Ageta H. Chang H.-C. and Chen Y.-P. Fern constituent: preoleanatetraene, a novel bicyclic triterpenoid hydrocarbon from *Polypodiodes formosana* 4381
Araki K. Akao K. Ikeda A. Suzuki T. and Shinkai S. Molecular design of calixarene-based host molecules for inclusion of C_{60} in solution 73
Araki S. Hirashita T. Shimizu H. Yamamura H. Kawai M. and Butsugan Y. Indium-mediated reaction of 1,3-dichloro- and 1,3-dibromopropenes with carbonyl compounds. Generation of novel 3,3-diindiopropene 8417
Araki Y. see Konoike T. 3339
Araneo S. Arrigoni R. Bjørsvik Fontana F. Minisci F. and Recupero F. Alternating addition of carbon-centered radicals to unsaturated systems. Novel homolytic aromatic substitutions 7425
Araneo S. Arrigoni R. Bjørsvik H.-R. Fontana F. Liguori L. Minisci F. and Recupero F. New free-radical chain processes involving substitution of vinyl and aryl chlorides by alkanes, alkenes, esters and ethers 6897
Arcadi A. Marinelli F. Pini E. and Rossi E. Base promoted reactions of 4-pentynones 3387
Arcadi A. and Rossi E. A palladium-catalyzed domino reaction of 3-acetyl-5-hexyn-2-one with aryl iodides under carbon monoxide 6811
Arcamone F. see Guidi A. 1123
Arcelli A. see Khai B. T. 6599
Archelas A. see Pedragosa-Moreau S. 3319
Archer I. V. J. Leak D. J. and Widdowson D. A. Chemoenzymic resolution and deracemisation of (±)-1-methyl-1,2-epoxycyclohexane: the synthesis of (1-*S*,2-*S*)-1-methylcyclohexane-1,2-diol 8819
Ardecky R. J. see Tamura S. Y. 4109
Argade A. B. see Andrus M. B. 5049
Ariente C. see David K. 3335
Arimoto H. Yokoyama R. and Okumura Y. Synthesis and revised structure of vallartanone B 4749
Arison B. see Hirschmann R. 5637
Arista L. see Palombi L. 7849
Arjona O. see Aceña J. L. 3043
Arjona O. see Aceña J. L. 105
Arjona O. see Aceña J. L. 8957
Arit M. see Marquais S. 5491
Armstrong R. W. Tellew J. E. and Moran E. J. Mono-osmylation of dehydroamino acid dienes: synthesis of dehydroamino acids related to the azinomycins 447
Armstrong R. W. see Dinh T. Q. 1161
Armstrong R. W. see Strocker A. M. 1149
Armstrong S. K. and Christie B. A. Synthesis of sulphur-containing heterocycles by ring closing diene metathesis 9373
Arnason J. T. see Chauret D. C. 7875
Arnaud-Neu F. see Fanni S. 7975
Arnecke R. Böhmer V. Ferguson G. and Pappalardo S. Inherently chiral derivatives of calix[5]crowns 1497
Arnó M. see Domingo L. R. 7573
Arnold D. P. see Yashunsky D. V. 7147
Arnold W. see Cereghetti M. 5347

Arnone A. Biagini G. Cardillo R. Resnati G. Bégué J.-P. Bonnet-Delpon D. and Kornilov A. Microbial reduction of α,α,α-trifluoro-α'-sulfenylketones 3903
Arnould J. C. Didelot M. Cadilhac C. and Pasquet M. J. Convenient synthesis of aromatic thiols from phenols 4523
Arrastia I. Lecea B. and Cossío F. P. Highly stereocontrolled synthesis of substituted propiolactones and butyrolactones from achiral lithium enolates and homochiral aldehydes 245
Arrastia I. and Cossío F. P. Tandem [2 + 2] cycloaddition–cycloreversion reactions in highly polar media: a convergent one-pot entry to substituted alkenes and dienes 7143
Arrieta A. see Ayerbe M. 3055
Arrigoni R. see Araneo S. 6897
Arrigoni R. see Araneo S. 7425
Arterburn J. B. and Perry M. C. Rhenium catalyzed sulfoxide reduction 7941
Arumugam V. see Khan N. M. 4819
Árvai G. see Mikló K. 3491
Arvanitis E. Motevalli M. and Wyatt P. B. Enantioselective synthesis of (*S*)-2-(aminomethyl)butanedioic acid using chiral β-alanine α-enolate equivalents 4277
Asakawa N. see Fuji K. 7373
Asakawa Y. see Kouda K. 4541
Asakawa Y. see Liu H.-J. 9307
Asakawa Y. see Toyota M. 4745
Asakura K. see Imamoto T. 503
Asano N. see Griffiths R. C. 3207
Asao N. see Yamamoto Y. 1863
Asaoka M. see Houkawa T. 1045
Asaoka M. see Kuramochi T. 7075
Asato A. E. Liu R. S. H. Rao V. P. and Cai Y. M. Azulene-containing donor–acceptor compounds as second-order nonlinear chromophores 419
Asensio G. Mello R. and González-Núñez M. E. Evidence for the involvement of a sulfurane intermediate in the oxidation of simple sulfides by methyl(trifluoromethyl)-dioxirane 2299
Asfari Z. Naumann C. Kaufmann G. and Vicens J. Molecular modelling and chemical synthesis of molecular 'mappemondes' designed from a calix[4]-bis-crown 3325
Asfari Z. see Pulpoka B. 6315
Asfari Z. see Pulpoka B. 8747
Ashton P. R. Glink P. T. Stoddart J. F. Menzer S. Tasker P. A. White A. J. P. and Williams D. J. The solid state structures of a [3]rotaxane and its [3]pseudorotaxane precursor 6217
Asif-Ullah M. see Kast P. 2691
Asoh T. see Toyota M. 4401
Astruc D. see Ruiz J. 4511
Ates C. see Laduron F. 5515
Atkins J. H. Ho D. M. and Jones, Jr M. A new source of 1,2-dehydro-*o*-carborane 7217
Atkinson R. N. Storey B. M. and King S. B. Reactions of acyl nitroso compounds with amines: production of nitroxyl (HNO) with the preparation of amides 9287
Atkinson R. S. Coogan M. P. and Lochrie I. S. T. Reagent-controlled diastereoselectivity in aziridination of alkenes by chiral 3-acetoxyamino-3,4-dihydroquinazolin-4-ones: 1'-(*t*-butyldimethylsilyloxy)-ethyl as the chiral 2-substituent on the quinazolinone 5179
Attwood M. R. Raynham T. M. Smyth D. G. and Stephenson G. R. Elaboration of a cyclohexadienyl triflate iron π-complex by palladium-catalysed coupling 2731
Aubé J. see Hoemann M. Z. 953
Aubé J. see Wendt J. A. 1531
Aubert C. see Llerena D. 7027
Aubert C. see Llerena D. 7353
Aubertin A.-M. see Benhida R. 1031
Aubry A. see André F. 183
Audergon L. see Gerster M. 6335
Audia J. E. Droste J. J. Dunigan J. M. Bowers J. Heath P. C. Holme D. W. Eifert J. H. Kay H. A. Miller R. D. Olivares J. M. Rainey T. F. and Weigel L. O. A diastereoselective tandem metalloenamine alkylation/aza-annulation of β-tetralones expedites the synthesis of benzoquinolinones 4121
Audley M. and Geraghty N. W. A. The regiochemistry of intramolecular photochemical [2 + 2] cycloaddition reactions: biradical conformation control 1641
Audrain H. see Wong T. 755
Aue D. H. see Lipshutz B. H. 8471
Augé J. and Leroy F. Lithium trifluoromethanesulfonate-catalysed aminolysis of oxiranes 7715
Aumelas A. see Pothion C. 1027
Aurich H. G. Geiger M. Gentes C. and Köster H. Formation of non-racemic tricyclic compounds by intramolecular 1,3-dipolar cycloaddition of nitrones 841
Auzeil N. see Largeron M. 7499
Avendaño C. see Pérez J. M. 6955
Averdung J. Wolff C. and Mattay J. Syntheses of urethano-, amido- and sulfonamido-[60]fullerenes by nucleophilic substitutions with 1,2-(2,3-dihydro-1*H*-azirino)-[60]fullerene 4683
Avilov D. V. see Soloshonok V. A. 7845
Awad R. W. see Nicolaides D. N. 1097
Axten J. see Winkler J. D. 4317
Ayadi E. see Czernecki S. 9193
Ayadim M. Habib Jiwan J. L. De Silva A. P. and Soumillion J. Ph. Photosensing by a fluorescing probe covalently attached to the silica 7039
Ayadim M. and Soumillion J. Ph. Photosensitizers covalently anchored to the silica surface: enhanced efficiency of heterogeneous photodechlorination of chlorinated aromatics 381
Ayala A. M. see Godjoian G. 433
Ayerbe M. Morao I. Arrieta A. Linden A. and Cossío F. P. Stereoselective conjugate addition of carbon nucleophiles to chiral (*E*)-nitroalkenes bearing a γ-stereocenter. Origins of the observed *anti* selectivity 3055
Ayoub M. see Brunissen A. 6713
Azhikina T. L. see Stetsenko D. A. 3571
Azov V. A. see Borodkin V. S. 1489
Azumaya I. Kagechika H. Yamaguchi K. and Shudo K. Facile formation of aromatic cyclic *N*-methylamides based on *cis* conformational preference 5003

Baasov T. see Du S. 3545
Baba A. see Yasuda M. 5951
Baba Y. see Takemoto Y. 3345
Bach T. and Lange C.
Hydroxyl-directed reductive ring opening at the C-2 position of functionalized 2-aryloxetanes 4363
Bäckvall J.-E. see Löfström C. M. G. 3371
Bacqué E. see Largeron M. 7499
Badea B.-A. see Bennani Y. L. 8109
Baeschlin D. K. Daube M. Blättler M. O. Benner S. A. and Richert C.
Four step synthesis of a 5'-deoxy-5'-iodomethylthymidine 1591
Bagatti M. see Gandolfi R. 1321
Bagatti M. see Gandolfi R. 517
Bagchi I. see Bhatia B. 7311
Bagryanskaya I. Yu. see Khlestkin V. K. 5997
Bähr A. Marek I. and Normant J.-F.
Diastereoselective carbometalation of δ-mono- and γ-δ-bisubstituted *Z* vinyl metals 5873
Bai D. see Xu R. 1463
Baiga T. J. see Mjalli A. M. M. 2943
Bailey J. M. see Hodgson D. M. 4623
Bailey W. F. and Punzalan E. R.
Isomerization of 2-(2-propenoxy)phenyllithium: tandem anionic cyclization– γ-elimination 5435
Baillet G. see Salemi-Delvaux C. 5127
Baine N. H. see Sisko J. 8113
Baird M. S. see Al Dulayymi J. R. 8933
Baker S. J. see Taylor G. M. 1297
Bakkeren F. J. A. D. Ramesh N. G. de Groot D. Klunder A. J. H. and Zwanenburg B.
Asymmetric desymmetrization of a pseudo-*meso endo*-tricyclo[5.2.1.$0^{2,6}$]-deca-4,8-dien-3-one by chiral amines 8003
Balasubramanian S. see Khan N. M. 4819
Balasubramanian T. and Hassner A.
Synthesis of chiral non-racemic 2-arylpyrrolines by a [3 + 2] cycloaddition route 5755
Balasubramaniam T. N. see Horn T. 743
Balaux E. and Ruel R.
Synthesis of succinic diesters via reductive coupling of α-haloesters using samarium(II) iodide and HMPA 801
Balcı M. Saraçoglu N. and Menzek A.
Unusual bicyclic endoperoxides containing pyridazine ring: reaction of unsaturated bicyclic endoperoxides with dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate 921
Baldan A. see Bonora G. M. 4761
Baldoví M. V. see Connolly T. J. 4919
Baldwin J. E. Claridge T. D. W. Culshaw A. J. Heupel F. A. Smrcková S. and Whitehead R. C.
A biomimetic approach to the manzamine alkaloids 6919
Baldwin J. E. Farthing C. N. Russell A. T. Schofield C. J. and Spivey A. C.
Use of (*S*)-*N*-*tert*-butoxycarbonylaziridine-2-carboxylate derivatives for α-amino acid synthesis 3761
Baldwin J. E. Fryer A. M. Spyvee M. R. Whitehead R. C. and Wood M. E.
Stereocontrol in the synthesis of kainoids 6923
Baldwin J. E. see Farthing C. N. 5225
Baldwin R. M. see Tamagnan G. 4353
Balenkova E. S. see Nenajdenko V. G. 4199
Ball R. G. see Kende A. S. 6295
Ballantine J. A. see Plater M. J. 7855
Ballestri M. see Chatgilialoglu C. 6383
Ballestri M. see Chatgilialoglu C. 6387
Ballestri M. see Chatgilialoglu C. 6391
Ballinger M. D. see Suich D. J. 6653
Ballini R. Papa F. and Bovicelli P.
Selective oxidation of nitrocompounds by dimethyldioxirane 3507
Ballini R. and Bosica G.
The Michael reaction of nitroalkanes with conjugated enones in aqueous media 8027
Balme G. see Cavicchioli M. 1429
Bamba M. Nishikawa T. and Isobe M.
Tin-assisted cyclization for chiral cyclohexane synthesis, an alternative route to (–)-tetrodotoxin skeleton 8199
Banciu M. D. see Hada C. 3845
Bandini E. Martelli G. Spunta G. Bongini A. and Panunzio M.
trans-Diastereoselective synthesis of 3-phthalimido β-lactams via a two step-Staudinger reaction 4409
Banerjee A. K. see Maiti S. 8061
Banfi L. Guanti G. and Zannetti M. T.
Synthesis of a key intermediate for Thienamycin and Imipenem through stereoselective two-direction elongation of asymmetrized bis(hydroxymethyl)acetaldehy de (BHYMA*) 521
Banik B. K. Subbaraju G. V. Manhas M. S. and Bose A. K.
Fused tricyclic β-lactams via intramolecular aryl radical cyclization 1363
Bankaitis-Davis D. see Greef C. H. 4451
Bankaitis-Davis D. see Mayer J. P. 5633
Banks J. T. Ingold K. U. Della E. W. and Walton J. C.
Bicyclo[1.1.1]pent-1-yl: a tertiary alkyl radical with enhanced reactivity 8059
Banwell M. G. and Cameron J. M.
Enantiospecific construction of the carbon skeleton associated with manicol, an antineoplastic sesquiterpene from *Dulacia guianensis* (Olacaceae) 525
Bao W. Zheng Y. Zhang Y. and Zhou J.
A novel synthesis of allyl and propargyl selenides in aqueous media promoted by indium 9333
Bao W. see Ying T. 3885
Baquer G. see Batey R. A. 6847
Barascut J.-L. see Lazrek H. B. 4701
Baraznenok I. L. see Nenajdenko V. G. 4199
Barba F. Elinson M. N. Escudero J. and Feducovich S. K.
Indirect electrochemical oxidation of cyclic ketones: strong influence of ring size on the result of the reaction 5759
Barbe B. see Vivas N. 2015
Barbosa S. L. see Dabdoub M. J. 831
Barbry D. and Champagne P.
Fast synthesis of aromatic aldehydes from benzylic bromides without solvent under microwave irradiation 7725

Barbu E. and Tsibouklis J. Unsymmetrically substituted aliphatic diacetylenes 5023
Barco A. Benetti S. De Risi C. Pollini G. P. Romagnoli R. and Zanirato V. Enantiodivergent synthesis of 2-hydroxymethyl-3-hydroxy-4-nitro-pyrrolidines through tandem Michael–Henry reaction using L-serine as the chiral educt 7599
Bareket Y. see Rozen S. 531
Bargon J. see Genkinger O. 6853
Barhate N. B. Sasidharan M. Sudalai A. and Wakharkar R. D. Selective catalytic oxidation of benzylic alcohols to the corresponding carbonyl compounds with TBHP over CrS-2 2067
Bari S. S. see Bose A. K. 6989
Barkanova S. V. Derkacheva V. M. Dolotova O. V. Li V. D. Negrimovsky V. M. Kaliya O. L. and Luk'yanets E. A. Homogeneous oxidation of aromatics in nucleus with peracetic acid catalyzed by iron and manganese phthalocyanine complexes 1637
Barkhash V. A. see Polovinka M. P. 2631
Barkhash V. A. see Volcho K. P. 6181
Barn D. R. Morphy J. R. and Rees D. C. Synthesis of an array of amides by aluminium chloride assisted cleavage of resin-bound esters 3213
Barnes C. L. see Kim W. 6425
Barnett-Thamattoor L. Wu J. J. Ho D. M. and Jones, Jr M. Carboranophanes 7221
Barone G. see Adinolfi M. 5007
Barrero A. F. Alvarez-Manzaneda E. and Lara A. Novel tricyclic sesquiterpenes from *Juniperus thurifera* L. Chemical confirmation of the duprezianane skeleton 3757
Bartnik R. Bensadat A. Cal D. Cebulska Z. Laurent A. Laurent E. and Rizzon C. A new synthesis of enaminoketones 8751
Bartoli G. Bosco M. Sambri L. and Marcantoni E. $TiCl_4$ Mediated $LiBH_4$ reduction of β-ketophosphine oxides: a high stereoselective route to the synthesis of *anti*-β-hydroxyphosphine oxides 7421
Bartoli G. Bosco M. Van Beek J. Sambri L. and Marcantoni E. Organo cerium reagents in organic chemistry: general method of synthesis of alkyl substituted 1,3-diols by $RLi–CeCl_3$ addition to β-hydroxyketones 2293
Bartolomé J. M. Carreño M. C. and Urbano A. Synthesis and Diels–Alder reactions of *N*-(*tert*-butoxycarbonyl)-3-*p*-tolyl-sulfinyl-1-benzoquinone-4-imine 3187
Barton D. H. R. Beck A. H. and Delanghe N. C. The carboxylation of saturated hydrocarbons by Gif systems. (Fe^{III} trispicolinate/$P(OMe)_3$/CO/H_2O_2 in pyridine–acetic acid) 1555
Barton D. H. R. Chabot B. M. and Hu B. Functionalization of saturated hydrocarbons in Gif-type systems using 2-methyl-1,4-naphthoquinone 1755
Barton D. H. R. Chung S. K. and Kwon T. W. Photochemical cleavage of cyclohexa-2,4-dienones under irradiation with visible light 3631
Barton D. H. R. Hu B. Li T. and MacKinnon J. The importance of pyridine complexation on selective oxidation within the Fe(III)–Fe(V) manifold in Gif chemistry 8329
Barton D. H. R. Hu B. Taylor D. K. and Rojas Wahl R. U. The importance of carboxylate ligands in the differentiation of catalase reactivity from Gif ketonization systems 1133
Barton D. H. R. and Choi S.-Y. An efficient rearrangement of secondary alkyl *S*-methyl xanthates by trimethyl-aluminum (TMA) 2695
Barton D. H. R. and Delanghe N. C. The conversion of saturated hydrocarbons into carboxylic acids using $Fe(CO)_5–H_2O_2$ oxidation 8137
Barton D. H. R. and Doris E. Alkylation of aromatic amines and related compounds using a copper(II)– aluminium(III) couple 3295
Barua N. C. see Bordoloi M. 6791
Baruah B. Prajapati A. B. D. and Sandhu J. S. Cadmium promoted allylation of acid chlorides: synthesis of β,γ-unsaturated ketones 9087
Baruah B. see Boruah A. 4203
Baruah M. Boruah A. Prajapati D. Sandhu J. S. and Ghosh A. C. A new method for the chemoselective reduction of aryl and aroylazides 4559
Basabe P. see Urones J. G. 1659
Basak A. and Khamrai U. K. Design, synthesis and biological activity of novel enediynyl monocyclic β-lactams 2475
Basaveswara Rao M. V. see Satyanarayana J. 3565
Basch H. see Sella A. 5573
Basnet P. see Kadota S. 7283
Bassindale A. R. Taylor P. G. and Xu Y. Synthesis of optically active α,β-epoxysilanes and silylaminoalcohols 555
Bates G. B. and Parker D. Synthesis of a ligand imposing tetrahedral coordination based on 1,10-phenanthroline 267
Bateson J. H. see Witty D. R. 3067
Batey R. A. Pedram B. Yong K. and Baquer G. Intermolecular additions of α-boryl radicals 6847
Batey R. A. see Winkler J. D. 8069
Batista A. C. F. see Dabdoub M. J. 9005
Bats J. W. see Maguire R. J. 5487
Batsanov A. S. Clarkson I. M. Howard J. A. K. and Steel P. G. Silenes in organic synthesis—I. Diastereo-selectivity in the siloxysilene–diene Diels–Alder cyclo-addition 2491
Bauchat P. see Denniel V. 5111
Baudat A. and Vogel P. Synthesis of β-D-(1→3)-C-linked 1,5,6-trideoxy-1,5-iminogalactoside of D-altrose derivatives 483
Bauer C. B. see Brogan J. B. 5053
Baussanne I. and Royer J. Asymmetric routes towards polyfunctionalized pyrrolidines: synthesis and reactivity of a chiral silyloxypyrrole 1213
Baxter S. J. Jenkins D. B. and Samuel C. J. A novel computational approach to the estimation of steric parameters— III. Extension to aliphatic amines and application to the adrenergic blocking activity of β-haloalkylamines 4617
Bayburt E. K. see Gu Y. G. 2565

Beak P. see Thayumanavan S. 2899
Beaton G. see Greef C. H. 4451
Beaton G. see Mayer J. P. 5633
Beattie K. A. see Kaya K. 6725
Beaupère D. see Glaçon V. 3683
Beaupere D. see Marek D. 49
Beaver K. A. Siegmund A. C. and Spear K. L.
Application of the sulfonamide functional group as an anchor for solid phase organic synthesis (SPOS) 1145
Becher J. see Leriche P. 5115
Beck A. H. see Barton D. H. R. 1555
Becke L. M. see Chou T. S. 17
Becker D. Gallil N. and Haddad N.
Highly efficient trapping of short-lived 1,4-diradicals, the order of first bond formation in the intramolecular photocycloaddition of 3-(4'-pentenyl)-cyclohex-2-enones 8941
Beddoes R. L. Lewis M. L. Gilbert P. Quayle P. Thompson S. P. Wang S. and Mills K.
Synthesis of α-alkoxysilanes: Birch reduction of 2-trialkylsilylfurans 9119
Beddoes R. L. Painter J. E. Quayle P. and Patel P.
MTO in 'clean' oxidation of thioether Fischer carbene complexes to their sulfoxides 9385
Bedekar A. V. and Andersson P. G.
A new class of bis-oxazoline ligands for the Cu-catalysed asymmetric cyclopropanation of olefins 4073
Bedos P. see Galéotti N. 3997
Begley M. J. see Crombie L. 9255
Bégué J.-P. Bonnet-Delpon D. and Rock M. H.
Z-Trifluoromethyl thioenol ethers, enol ethers, and enamines; reactivity towards organolithium reagents 171
Bégué J.-P. see Arnone A. 3903
Beigelman L. see Matulic-Adamic J. 6973
Békássy S. see Cseri T. 1473
Bekesi J. G. see Weisz I. 563
Beletskaya I. P. see Burnagin N. A. 897
Beley M. see Chodorowski-Kimmes S. 2963
Bell A. A. see Davis B. 8565
Bell A. A. Pickering L. Watson A. A. Nash R. J. Griffiths R. C. Jones M. G. and Fleet G. W. J.
2-Hydroxycastanospermines (dihydroxy-L-swainsonines) from octonolactones: inhibition of naringinase (L-rhamnosidase) 8561
Bell A. S. Fishwick C. W. G. and Reed J. E.
Highly efficient diastereoselective *exo* Diels–Alder reactions of homochiral 2-(*N*-acylamino)-1-thia-1,3-dienes: a powerful entry into optically pure thiopyrans 123
Bell D. Davies M. R. Finney F. J. L. Geen G. R. Kincey P. M. and Mann I. S.
The effect of catalyst loading and donor ligands in the Mn(III) salen catalysed chiral epoxidation of chromenes: synthesis of BRL 55834 3895
Bell L. Whitby R. J. Jones R. V. H. and Standen M. C. H.
Catalytic asymmetric carbomagnesiation of unactivated alkenes. A new, effective, active, cheap and recoverable chiral zirconocene 7139
Bell S. J. see Polniaszek R. P. 575
Beller M. and Riermeier T. H.
First efficient palladium-catalyzed Heck reactions of aryl bromides with alkyl methacrylate 6535
Belloro E. see Appendino G. 7837
Bellucci G. Chiappe C. Cordoni A. and Ingrosso G.
Enantioconvergent transformation of racemic *cis*-dialkyl substituted epoxides to (*R,R*) *threo* diols by microsomal epoxide hydrolase catalysed hydrolysis 9089
Bellucci G. Chiappe C. and Lo Moro G.
Crown ether catalyzed stereospecific synthesis of *Z*- and *E*-stilbenes by Wittig reaction in a solid–liquid two-phases system 4225
Belt S. T. Cooke D. A. Robert J.-M. and Rowland S.
Structural characterisation of widespread polyunsaturated isoprenoid biomarkers: a C_{25} triene, tetraene and pentaene from the diatom *Haslea ostrearia* simonsen 4755
Belyakov S. A. see Katritzky A. R. 6631
Belyasmine A. see Leriche P. 8861
BeMiller J. N. see Petrušová M. 2341
Benayahu Y. see Fridkovsky E. 6909
Benbow J. W. and Martinez B. L.
Biaryl formation using the Suzuki protocol: considerations of base, halide, and protecting group 8829
Bender S. L. see Gauthier, Jr D. R. 13
Benetti S. see Barco A. 7599
Bengtsson M. see Unelius C. R. 1505
Benhida R. Aubertin A.-M. Grierson D. S. and Monneret C.
A convenient synthesis of 1-ethoxymethyl-5-nitro-6-substituted uracils 1031
Benito A. M. Darwish A. D. Kroto H. W. Meidine M. F. Taylor R. and Walton D. R. M.
Synthesis and characterisation of the methanofullerenes, $C_{60}(CHCN)$ and $C_{60}(CBr_2)$ 1085
Benjamin L. J. Mander L. N. and Willis A. C.
Conversion of a gibberellin aldehyde into a 20-norkaurenoid lactone 8937
Bennani Y. L. Hwang C.-K. Canan Koch S. S. Marron K. S. Dardashti L. J. Badea B.-A. and Nadzan A. M.
Synthesis of geometrically defined exocyclic olefins 8109
Bennasar M.-L. Jiménez J.-M. Sufi B. A. and Bosch J.
The effect of lithium iodide on the acid-promoted cyclization of 4-[(1-indolylcarbonyl)-methyl]-1,4-dihydropyridines 7653
Bennasar M.-L. Jiménez J.-M. Sufi B. A. and Bosch J.
A concise, stereoselective synthesis of (±)-geisso-schizine 9105
Bennasar M.-L. Vidal B. Lázaro A. Kumar R. and Bosch J.
A short route for the construction of the tetracyclic ring system of silicine–methuenine alkaloids 3541
Bennasar M.-L. Zulaica E. Ramírez A. and Bosch J.
Construction of the quaternary C-7 centre of akuammiline alkaloids. Synthesis of 3,4-secoakuammilan derivatives 6611
Bennasar M.-L. see Amat M. 5217
Benneche T. see Mangalagiu I. 1309
Benner S. A. see Baeschlin D. K. 1591
Bennis K. see Ripoche I. 3991
Bensadat A. see Bartnik R. 8751
Benson D. R. and Fu J.
Exciplex fluorescence in

inclusion complexes of naphthalene derivatives 4833
Benson S. C. Lee L. and Snyder J. K. Inverse electron demand Diels–Alder reactions of indole—V. Reactions of 3-substituted indoles with heteroaromatic azadienes 5061
Berchadsky Y. see Mattalia J.-M. 4717
Beregszászi T. see Molnár A. 8597
Berger J. see Zhao S.-H. 4463
Bergman J. and Bergman S. Formation of 3,3,5,7-tetranitrooxindole and 3,5,7-trinitroindazole by nitration of oxindole 9263
Bergman S. see Bergman J. 9263
Bergquist K.-E. see Broddefalk J. 3011
Bergstrom C. P. see Schlessinger R. H. 2133
Bergström G. see Johansson A. 7127
Berkessel A. Geisel U. and Hérault D. A. A synthesis of cyclo-2,3-diphospho-D-glycerate from D-mannitol 355
Berkowitz D. B. Pedersen M. L. and Jahng W.-J. Synthesis of higher α-chlorovinyl and α-bromovinyl amino acids: the amino protecting group determines the reaction course 4309
Bermejo F. see Rico R. 5809
Bermejo F. see Rodríguez R. 5581
Bernabé P. Rutjes F. P. J. T. Hiemstra H. and Speckamp W. N. Palladium(0)-catalyzed coupling reactions of an *N*-tosylpyrrolidinone-derived enamine triflate 3561
Bernabeu M. C. Chinchilla R. Nájera C. and Rodríguez M. A. (2*E*)-4-Methoxy-2,4-pentadienamides as new dienes in the Diels–Alder reaction 3595
Bernadyuk S. see Akhrem I. 5775
Bernard H. see Gardinier I. 7711
Bernard S. see Dare S. 4341
Bernard-Henriet C. and Chanon M. The Diels–Alder additions of phenylcyclopentadienes: tests for the PMO theory and the diradicaloid model 2417
Bernardi A. Colombo G. and Scolastico C. Enantioselective Mukaiyama–Michael reactions of 2-carbomethoxycyclopentenone catalyzed by chiral bis(oxazoline)–Cu(II) complexes 8921
Bernardinelli G. see Jefford C. W. 159
Bernardini J.-J. see Wong-Lun-Sang S. 3329
Bernini R. see Saladino R. 2647
Bernotas R. C. and Adams G. Synthesis of a 1-benzylpiperazin-2-one nitrone and its reaction with alkynes and alkenes 7339
Bernotas R. C. and Adams G. 2,3,4,4a,5,6-Hexahydro-1*H*-pyrazino[1,2-*a*]quinoline synthesis via a [3 + 2] cycloaddition 7343
Berrée F. see Palomo C. 4565
Berrée F. see Palomo C. 6931
Berreth C. L. see Miles W. H. 7893
Berrie R. L. see Phife D. W. 5227
Berrie R. see Chu M. 7229
Bertozzi C. R. see Manning D. D. 1953
Bertram G. Scherer A. Steglich W. Weber W. and Anke T. Total synthesis of (±)-strobilurin E 7955
Bertrand G. see Bon E. 1217
Bertrand M.-P. Gastaldi S. and Nouguier R. 4-Isopropenyl-3-tosylmethyl pyrrolidines through radical cyclizations of 4-aza-1,6-dienes—an approach to kainic acids 1229
Bertus P. and Pale P. Silver salts as new catalyst for coupling reactions; synthesis of epoxyenynes 2019
Besra G. S. see Shilvock J. P. 8569
Bessho K. see Yamamoto Y. 7801
Bessières B. see Hercouet A. 4529
Besson L. Le Bail M. Aitken D. J. Husson H.-P. Rose-Munch F. and Rose E. An enantiomerically pure tricyclic isoindoline system by cyclisation of tricarbonyl[η⁶-(*R*)-*N*-cyanomethyl-4-phenyloxazolidine]chromium 3307
Besson T. see Parker M.-C. 8383
Bethell D. see Page P. C. B. 2515
Beugelmans R. Chbani M. and Soufiaoui M. First synthesis of macrocycles by quadruple $S_{RN}1$ reactions 1603
Beugelmans R. see Wagner B. 6557
Beveridge R. see Shapiro M. J. 4671
Beyermann M. see Wenschuh H. 5483
Bhadbhade M. M. see Nair V. 5623
Bhaduri S. see Maiti S. 8061
Bhagwat S. S. Gude C. and Chan K. Synthesis of enantiomerically pure pyrrolidinones as endothelin receptor antagonists 4627
Bhakuni D. S. see Paul S. 4055
Bhakuni D. S. see Rani A. 8037
Bhakuni V. see Kumar A. 4751
Bhalla V. see Kumar S. 3495
Bhanu Prasad A. S. see Stevenson T. M. 8375
Bharadwaj P. K. see Chand D. K. 8443
Bhaskar K. V. and Mander L. N. Synthesis of GA_{32}, the major bioactive gibberellin from immature seeds of *Prunus persica* 719
Bhaskar Kanth J. V. see Periasamy M. 4767
Bhat S. and Chandrasekaran S. Oxygenation of alkenes with *t*-BuOOH catalysed by β-cyclodextrin borate 3581
Bhat S. V. see Hadimani S. B. 4791
Bhatia B. Jain S. De A. Bagchi I. and Iqbal J. A cobalt catalyzed protocol for the synthesis of substituted β-phenyl isoserine derivatives 7311
Bhatt R. K. Ye J. and Falck J. R. Conjugate addition of α-alkoxystannanes via *in situ* transmetalation using catalytic CuCN 3811
Bhatt R. K. see Heckmann B. 1421
Bhattacharjee A. Bhattacharjya A. and Patra A. Intramolecular cycloaddition of 3-*O*-Cyclohexenyl carbohydrate nitrones: diastereoselective synthesis of optically pure tetrahydropyrano[2,3]cyclohexane derivatives 7635
Bhattacharjee M. and Datta R. Synthesis of a new macrocyclic ligand with six amide receptor sites 3579
Bhattacharjya A. see Bhattacharjee A. 7635
Bhattacharya S. see Ghosh S. 5769
Bhattacharya S. K. see Winkler J. D. 8069
Bhuyan P. J. Sandhu J. S. and Ghosh A. C.

"Tertiary amine effect" strategy in the synthesis of novel uracil analogues 1853
Bi Y. see Kim J.-M. 5305
Biagini G. see Arnone A. 3903
Biali S. E. see Cerioni G. 5797
Biancotto G. see Jin Y. 973
Biard J. F. see Fretté X. C. 2959
Bied C. see Collet H. 9043
Bielmann J.-F. see Magnin G. C. 7833
Bienert M. see Wenschuh H. 5483
Bifulco G. see Riccio R. 1979
Bigg D. C. H. see Bon E. 1217
Biggadike K. see Blériot Y. 7155
Bignan G. see Pearson A. J. 735
Bilci N. A. see Kukkola P. J. 5065
Bildstein S. Ducep J.-B. Jacobi D. and Zimmermann P. Synthesis of 5,6-difluoroarachidonic acid, a potential inhibitor of 5-lipoxygenase 4941
Bildstein S. Ducep J.-B. and Jacobi D. A novel synthetic approach to the preparation of various α,α-difluoroesters 8759
Billard T. and Langlois B. R. A new simple access to trifluoromethyl thioethers or selenoethers from trifluoromethyl trimethylsilane and disulfides or diselenides 6865
Biller S. A. see Tortolani D. R. 5687
Binder W. H. and Menger F. M. Heptakis-6-amino-6-deoxy-β-cyclodextrin as a catalyst for H/D exchange 8963
Bird C. W. see Afarinkia K. 4801
Bird K. see Suda Y. 1053
Birman V. B. Chopra A. and Ogle C. A. A novel approach to tricyclic pharmaceuticals via directed dilithiation of diaryl compounds 5073
Bishop W. R. see Phife D. W. 5227
Bisseret P. see Herrmann D. 1791
Bittencourt S. T. see Bonacorso H. G. 9155
Bittrich V. see de Oliveira C. M. A. 6427
Bizuneh A. see Xu Y.-C. 455
Bjergarde K. see Mayer J. P. 5633
Bjergarde K. see Mayer J. P. 8081
Bjørsvik H.-R. see Araneo S. 6897
Bjørsvik see Araneo S. 7425
Black D. StC. Craig D. C. Kumar N. and McConnell D. B. Synthesis and crystal structure of a calix[3]indole with cone conformation: a new molecular receptor 241
Black G. P. Murphy P. J. Walshe N. D. A. Hibbs D. E. Hursthouse M. B. and Abdul Malik K. M. A short synthetic route to the tricyclic guanidinium core of the batzelladine alkaloids 6943
Black W. C. Giroux A. and Greidanus G. Silyloxy-Cope rearrangement of chiral aldol adducts 4471
Blacklock T. J. see Königsberger K. 9029
Blacklock T. J. see Xu D. 5301
Blades K. Patel S. T. Percy J. M. and Wilkes R. D. Facile [2,3]-rearrangements of difluoroallylic alcohols with C–P and C–S bond formation 6403
Blagbrough I. S. Moya E. and Walford S. P. Practical, convergent total synthesis of polyamine amide spider toxin NSTX-3 551
Blake A. J. see Mascal M. 3505
Blanalt S. Salmain M. Malézieux B. and Jaouen G. Synthesis and reactivity of a transition metal-carbonyl imidoester designed for the selective and covalent labelling of biological macromolecules 6561
Blankenfeldt W. Liao J.-W. Lo L.-C. and Yeh M.-C. P. Sequential additions of nucleophiles to tricarbonyl(η^4-cycloheptadienyl)-iron tetrafluoroborate 7361
Blankespoor C. L. see Glisan King A. 2141
Blättler M. O. see Baeschlin D. K. 1591
Blein J.-P. see Ducrot P.-H. 3121
Blériot Y. Smelt K. H. Cadefau J. Bollen M. Stalmans W. Biggadike K. Johnson L. N. Oikonomakos N. G. Lane A. L. Crook S. Watkin D. J. and Fleet G. W. J. 7-Carbon mimics of D-glucose and L-fucose: activation by 6*R*-, and inactivation by 6*S*, -6*C*-methylglucose of glycogen synthase: inhibition of glucokinase and/or glucose-6-phosphatase 7155
Bloch R. see Bortolussi M. 8729
Bloch R. see Girard C. 63
Bloodworth A. J. Bothwell B. D. Collins A. N. and Maidwell N. L. A short synthesis of naturally occurring and other analogues of plakinic acids that contain the 1,2-dioxolane group 1885
Bódás Z. see Cseri T. 1473
Boden C. D. J. Norley M. C. and Pattenden G. Total synthesis of the thiazoline-based cyclopeptide cyclodidemnamide 9111
Boehlow T. R. and Spilling C. D. The regio- and stereoselective epoxidation of alkenes with methyl trioxorhenium and urea–hydrogen peroxide adduct 2717
Boelens M. see De Kimpe N. 3171
Boerrigter H. Verboom W. van Hummel G. J. Harkema S. and Reinhoudt D. N. Selective functionalization of resorcinarene cavitands; single crystal X-ray structure of a distally functionalized cavitand 5167
Böhler B. Hüls D. and Günther H. NMR spectroscopy of organolithium compounds—XIX. Reaction of *(Z)*-1,2-bis(trimethylsilyl)-1-phenyl-ethene with lithium: dianion formation, Schlenk dimerization, and $^{13}C,^{6}Li$ coupling in a benzyllithium system 8719
Böhler B. and Günther H. NMR spectroscopy of organolithium compounds—XX. $^{6}Li,^{29}Si$ shift correlation: a new tool for structural studies of silylsubstituted organolithium compounds 8723
Bohlmann R. and Strehlke P. Synthesis of functionalized 1-vinylazoles by a novel Wittig reaction of 1-acylazoles 7249
Böhmer V. see Arnecke R. 1497
Bohne C. see Schnapp K. A. 2317
Bohrer P. see Netscher T. 8359
Boivin J. Huppé S. and Zard S. Z. A convergent approach to functionalised alkynes 8735
Bojack G. Künzer H. Rölfing K. and Thiel M. A novel, stereocontrolled approach to ring B alkylated estratetraenes 6103
Bokesch H. R. McKee T. C. Cardellina, II J. H. and Boyd M. R. Suberosenone, a new cytotoxin from *Subergorgia suberosa* 3259
Boland W. see Schierle K. 8715

Bolesov I. G. see Al Dulayymi J. R. 8933
Bolitt V. see Ngueface J.-F. 5527
Bolitt V. see Ngueface J.-F. 59
Bollen M. see Blériot Y. 7155
Bollmark M. Zain R. and Stawinski J. A facile entry to nucleoside phosphorofluoridate and nucleoside phosphorofluoridothioate diesters 3537
Bollmark M. and Stawinski J. A facile access to nucleoside phosphorofluoridate, nucleoside phosphorofluoridothioate, and nucleoside phosphorofluoridodithioate monoesters 5739
Bolm C. Kaufmann D. Zehnder M. and Neuburger M. Optically active sulfoximines in enantioselective palladium catalysis 3985
Bols M. Persson M. P. Butt W. M. Jørgensen M. Christensen P. and Hansen L. T. Synthesis of a ribofuranosyl cation mimic 2097
Bols M. see Hansen H. C. 4211
Bolton G. L. Solid phase synthesis of azabicyclo[4.3.0]nonen-8-one amino acid derivatives via intramolecular Pauson–Khand cyclization 3433
Bombardelli E. see Appendino G. 727
Bombardelli E. see Appendino G. 7837
Bon E. Réau R. Bertrand G. and Bigg D. C. H. Aluminum trichloride-promoted aminolysis of cyclic imides and oxazolidinones 1217
Bonacorso H. G. Bittencourt S. T. Wastowski A. D. Wentz A. P. Zanatta N. and Martins M. A. P. A convenient method for the synthesis of 2-trichloromethyl-4-*p*-substituted-phenyl-3*H*-1,5-benzodiazepines 9155
Bonadies F. De Angelis F. Locati L. and Scettri A. A convenient acid-catalyzed oxidation of sulfides to sulfoxides by *t*-butyl hydroperoxide 7129
Bonadies F. Scettri A. and Di Campli C. A new approach to 4-hydroxy-cyclopent-2-en-1-ones by Horner– Wadsworth–Emmons olefination of 1,2-diketones 1899
Bonadies F. see Palombi L. 7849
Bonanomi G. see Camerini R. 2467
Bondar G. V. see Moss G. P. 2877
Bondon A. see Poignant G. 7511
Bongini A. see Bandini E. 4409
Bonini C. Giugliano A. Racioppi R. and Righi G. Synthesis of the C_1–C_{10} fragment of the macrolide antibiotic nystatin A_1 from a chiral building block obtained via chemoenzymatic approach 2487
Bonini C. see Righi G. 6893
Bonjoch J. see Solé D. 5213
Bonnat M. Bradley M. and Kilburn J. D. The solid phase synthesis of a guanidinium based 'tweezer' receptor 5409
Bonnet-Delpon D. see Arnone A. 3903
Bonnet-Delpon D. see Bégué J.-P. 171
Bonnett R. see Mironov A. F. 6395
Bonnette C. Salmon L. and Gaudemer A. Synthesis of 5-phosphate-D-arabinohydroxamic acid, a potent transition state analogue inhibitor of 6-phosphate-D-glucose isomerases 1221
Bonora G. M. Baldan A. Schiavon O. Ferruti P. and Veronese F. M. Poly(*N*-acryloylmorpholine) as a new soluble support for the liquid-phase synthesis of oligonucleotides 4761
Booker-Milburn K. I. and Cowell J. K. An intramolecular [2 + 2] photocycloaddition–fragmentation approach towards the total synthesis of asteriscanolide 2177
Borate H. B. see Ponde D. 4605
Bordner J. see Kawagishi H. 7399
Bordoloi M. Barua N. C. Mohan S. Dutta S. C. Mathur R. K. Ghosh A. C. and Rychlewska U. Sapidolide A: an unprecedented spherical carbocyclic lactone from *Baccaurea sapida* seed kernels: is it a meroisoprenoid? 6791
Bordwell F. G. see Soderquist J. A. 2561
Borecka B. Gamlin J. N. Gudmundsdottir A. D. Olovsson G. Scheffer J. R. and Trotter J. Unusual photorearrangements of 9,10-disubstituted triptycene-1,4-quinone derivatives 2121
Borg-Karlson A.-K. see Unelius C. R. 1505
Borgeson B. see Abrell L. M. 2331
Borgeson B. see Abrell L. M. 8983
Borin G. see Ruzza P. 5191
Borodkin V. S. Shpiro N. A. Azov V. A. and Kochetkov N. K. Substrate dependent intramolecular Pauson–Khand reaction of carbohydrate *exo*-methylene derivatives. Unexpected formation of fused "[4.1.0] bicycloheptene–pyranose" tricyclic product 1489
Bortolussi M. Cinquin C. and Bloch R. Stereoselective additions of Grignard reagents to masked imines and iminium ions 8729
Boruah A. Baruah B. Prajapati D. Sandhu J. S. and Ghosh A. C. Microwave-induced 1,3-dipolar cycloaddition of 2-aroyl-aziridines 4203
Boruah A. see Baruah M. 4559
Boruah R. C. see Ahmed S. 8231
Boscarato A. see Dondoni A. 7587
Bosch J. see Amat M. 3071
Bosch J. see Amat M. 5217
Bosch J. see Bennasar M.-L. 3541
Bosch J. see Bennasar M.-L. 6611
Bosch J. see Bennasar M.-L. 7653
Bosch J. see Bennasar M.-L. 9105
Bosch J. see Solé D. 5213
Boschi T. see Paolesse R. 2637
Boschi T. see Saladino R. 2647
Bosco M. see Bartoli G. 2293
Bosco M. see Bartoli G. 7421
Bose A. K. Jayaraman M. Okawa A. Bari S. S. Robb E. W. and Manhas M. S. Microwave-assisted rapid synthesis of α-amino-β-lactams 6989
Bose A. K. see Banik B. K. 1363
Bose D. S. see Gurjar M. K. 6615
Bosica G. see Ballini R. 8027
Bosso C. see Comte G. 2955
Bostwick R. D. see Shaw-Ponter S. 1867
Boswell G. A. see Li H.-Y. 1551
Bothwell B. D. see Bloodworth A. J. 1885
Botrel A. see Denis C. 53

Bott S. G. see Marchand A. P. 467
Bott S. G. see Marchand A. P. 8101
Bottle S. E. see Adam W. 2113
Boucher J.-L. Vadon S. Tomas A. Viossat B. and Mansuy D. Oxidation of arylamidoximes by hydrogen peroxide and horseradish peroxidase in water: easy preparation and X-ray structure of *O*-(arylimidoyl)arylamidoximes 3113
Bouhadir K. H. see Li Z. 4651
Boukherroub R. see Mirza-Aghayan M. 3109
Boukhris S. Souizi A. and Robert A. Short and efficient synthesis of new α-oximino esters 4693
Boulaajaj S. see Sebti S. 3999
Bourel L. Tartar A. and Melnyk P. Improved synthesis of pyridazinediones under microwave irradiation 4145
Bourguet-Kondracki M.-L. Debitus C. and Guyot M. Dipuupehedione, a cytotoxic new red dimer from a New Caledonian marine sponge *Hyrtios* sp. 3861
Bourguet-Kondracki M. L. Martin M. T. and Guyot M. A new β-carboline alkaloid isolated from the marine sponge *Hyrtios erecta* 3457
Bourguignon J.-J. see Moutou J.-L. 1787
Bourhis M. see Ourtoule J.-C. 4697
Bourseul A. see Poignant G. 7511
Bourzat J.-D. Vuilhorgne M. Rivory L. P. Robert J. and Commerçon A. Semisynthesis of RPR 121056A, a major metabolite of irinotecan (CPT-11) 6327
Boussard G. see André F. 183
Boussie T. see López B. R. 5437
Bouyssi D. see Cavicchioli M. 1429
BouzBouz S. see Cossy J. 5091
Bouziani L. see Escudier J.-M. 4689
Bovicelli P. see Ballini R. 3507
Bowden M. C. see Greeves N. 2675
Bowers J. see Audia J. E. 4121
Bowman J. L. see McDonald F. E. 4675
Boyce P. G. T. see Luke R. W. A. 263
Boyce R. J. and Pattenden G. Sequential sp^2–sp^2 coupling reactions in polyene macrolide synthesis. A novel approach to macrolactin A 3501
Boyd E. A. Boyd M. E. K. and Kerrigan F. Facile synthesis of phosphorus-containing heterocycles 5425
Boyd E. A. Boyd M. E. K. and Loh, Jr V. M. Facile synthesis of functionalised phenylphosphinic acid derivatives 1651
Boyd E. A. Chan W. C. and Loh, Jr V. M. Multiple solid phase synthesis of (*RS*)-1-aminophosphinic acids 1647
Boyd M. E. K. see Boyd E. A. 5425
Boyd M. E. K. see Boyd E. A. 1651
Boyd M. R. see Bokesch H. R. 3259
Boyd R. see Davis F. A. 3267
Bracey A. see Waldman S. R. 7889
Bradlee M. J. see Coe J. W. 6045
Bradley E. L. Herbert R. B. Lawrie K. W. M. Khan J. A. Moody C. M. and Young D. W. Corrigendum 7329
Bradley E. L. Herbert R. B. Lawrie K. W. M. Khan J. A. Moody C. M. and Young D. W. The biosynthesis of the *Streptomyces* antibiotic bicyclomycin 6935
Bradley M. see Bonnat M. 5409
Bradley M. see Cardno M. 135
Bradley M. see Probert J. M. 1101
Bradshaw J. S. see Chen Z. 6831
Brady P. A. see Rowan S. J. 6013
Braekman J.-C. see Klein D. 7519
Braga A. L. see Silveira C. C. 6085
Braga A. L. see Silveira C. C. 9173
Braghiroli D. and Di Bella M. New methods for the preparation of 2-amino-2-methylpropanesulfonic acid 7319
Branan B. M. see Paquette L. A. 1721
Brand G. see Hosseini M. W. 1405
Brandi A. see Machetti F. 4205
Brands K. M. J. Marchesini G. Williams J. M. Dolling U.-H. and Reider P. J. An expedient one-pot synthesis for protected 2-thia-5-azabicyclo[2.2.1]-heptan-3-ones. Versatile intermediates in the synthesis of carbapenem sidechains 2919
Brandt T. A. see Evans P. A. 1367
Brandt T. A. see Evans P. A. 6443
Brandt T. A. see Evans P. A. 9143
Braslau R. Kuhn H. Burrill, II L. C. Lanham K. and Stenland C. J. Synthesis of several novel optically active nitroxyl radicals 7933
Braun N. A. and Spitzner D. Highly functionalized enantiopure oxatricyclo[3.3.1.$0^{4,6}$]-nonanes; selective opening of an activated cyclopropane ring 9187
Bravo P. Zanda M. and Zappalà C. Highly stereospecific S_N2-type displacement of sulfinyl by hydroxy group under Pummerer conditions 6005
Braxmeier T. see Knölker H.-J. 5861
Bray A. M. see Ede N. J. 9097
Bray A. M. see Valerio R. M. 3019
Brayer J.-L. see Darses S. 3857
Breinbauer R. see Reetz M. T. 4499
Bremner J. B. Skelton B. W. Smith R. J. Tarrant G. J. and White A. H. Synthesis of a deoxynojirimycin analogue from castanospermine 8573
Bremner J. B. Smith R. J. and Tarrant G. J. A Meisenheimer rearrangement approach to bridgehead hydroxylated tropane alkaloid derivatives 97
Brenig V. see Reggelin M. 6851
Brennan P. J. see Shilvock J. P. 8569
Breslow R. Desper J. and Huang Y. A selective intramolecular aldol condensation directed by a bifunctional enzyme mimic 2541
Breslow R. and Schmuck C. The mechanism of thiazolium catalysis 8241
Bressette A. R. see McGarvey G. J. 5465
Breu J. see Riebel P. 1583
Breu J. see Riebel P. 1587
Bricard L. see Marder R. 1777
Bricout H. Carpentier J.-F. and Mortreux A. Bis(aminophosphine)–nickel complexes as efficient catalysts for alkylation of allylic acetates with stabilized nucleophiles 6105
Brigaud T. Lefebvre O. Plantier-Royon R. and

Portella C.
Mixed organofluorine–organosilicon chemistry—VI. Synthesis of *gem*-difluoro-*C*-glycosides and *C*-disaccharides from acylsilanes and trifluoromethyltrimethylsilane. An exploratory study 6115
Brillon D. see Schwan A. L. 2345
Brinker U. H. see Kupfer R. 6647
Brinker U. H. see Rosenberg M. G. 3235
Brocard J. see Carpentier J.-F. 167
Broddefalk J. Bergquist K.-E. and Kihlberg J.
Preparation of a glycopeptide analogue of type II collagen—use of acid labile protective groups for carbohydrate moieties in solid phase synthesis of *O*-linked glycopeptides 3011
Brogan J. B. Bauer C. B. Rogers R. D. and Zercher C. K.
Selectivity in the rearrangements of oxonium ylides 5053
Broger E. A. see Cereghetti M. 5347
Brooks D. A. see Williams D. R. 983
Brough P. A. Fisher S. Zhao B. Thomas R. C. and Snieckus V.
Complex induced proximity effect enhancement in α-silyl carbanion generation. A general conversion of 2-silyl benzamides into 2-fluorosilyl-acetophenones 2915
Brown C. and Evans G. R.
The 'thio-Arbuzov' reaction of sulfenate esters with sulfenyl chlorides: fate of the thiosulfinate product 9101
Brown C. and Evans G. R.
The reaction of sulfenate esters with acyl chlorides. Formation of sulfenyl chlorides, and trapping thereof with alkenes 679
Brown E. see Dujardin G. 4007
Brown H. C. see Dhokte U. P. 8345
Brown H. C. see Dhokte U. P. 9021
Brown H. C. see Kulkarni S. V. 1763
Brown H. C. see Kulkarni S. V. 4125
Brown H. C. see Ramachandran P. V. 2205
Brown H. C. see Ramachandran P. V. 3795
Brown H. C. see Ramachandran P. V. 4911
Brown M. see Fry D. F. 6227
Brown R. F. C. Coulston K. J. and Eastwood F. W.
Formation of biphenylene by elimination of C_2 from 9,10-didehydrophenanthrene at 1100°C 6819
Brown S. M. see Greeves N. 2675
Brown T. Dronsfield A. Jablonski A. and Wilkinson A.-S.
The thermolysis of benzyl cobaloximes: a new one step synthesis of 5-arylisoxazoles 5413
Bruce D. W. see Wang Q. M. 7641
Bruch M. D. see McClure C. K. 2153
Bruck M. see Liao S. 7917
Brunel Y. and Rousseau G.
Reaction of non stabilised phosphonium ylides with lactones 3853
Brüning J. and Kiessling L. L.
Convergent synthesis of sulfated bivalent glycopeptides as selectin ligands 2907
Brunissen A. Ayoub M. and Lavielle S.
Incorporation of Cα-methyl amino acids by solid phase peptide synthesis in a peptide sequence 6713
Brunner H. see Fürstner A. 7009
Bruzinski P. R. see Davies H. M. L. 4133
Bryan V. J. and Chan T.-H.
Indium mediated intramolecular carbocyclization in aqueous media. A facile and stereoselective synthesis of fused α-methylene-γ-butyrolactones 5341
Bu X. R. Li H. Van Derveer D. and Mintz E. A.
A novel approach to synthesis of tricyanovinylthiophene for heterocyclic imidazole nonlinear optical chromophores 7331
Bubnov Y. N. Klimkina E. V. Ignatenko A. V. and Gridnev I. D.
Preparation of *trans*-2-allyl-6-alkyl(aryl)-1,2,3,6-tetrahydropyridines by reductive *trans*-2,6-dialkylation of pyridine. Synthesis of (±)-epidihydropinidine 1317
Bucca D. see Son D. Y. 1579
Buck R. T. Doyle M. P. Drysdale M. J. Ferris L. Forbes D. C. Haigh D. Moody C. J. Pearson N. D. and Zhou Q.-L.
Asymmetric rhodium carbenoid insertion into the Si–H bond 7631
Buckman B. O. and Mohan R.
Solid-phase synthesis of 1,3-dialkyl quinazoline-2,4-diones 4439
Budešínsky M. see Endová M. 3497
Buhr S. Griesbeck A. G. Lex J. Mattay J. and Schröer J.
Stereoselectivity in the Paternò–Büchi reaction of 2,2-diisopropyl-1,3-dioxol with methyl trimethylpyruvate 1195
Bull D. S. see Posner G. H. 6279
Bulychev N. see Varaprasad C. V. 9
Bumagin N. A. Sukhomlinova L. I. Luzikova E. V. Tolstaya T. P. and Beletskaya I. P.
Catalytic coupling of terminal acetylenes with iodoarenes and diaryl-iodonium salts in water 897
Buono G. see Chiodi O. 39
Burandt, Jr C. L. see Ohyama M. 5155
Burgat Charvillon F. and Amouroux R.
Synthesis of nonracemic 3-fluoro-aspartic acids 5103
Burger A. see Magnin G. C. 7833
Burger K. see Osipov S. N. 615
Burger K. see Pires R. 8159
Burger U. see Montes I. F. 1007
Burgess E. J. see Perry N. B. 9387
Burgess L. E. Gross E. K. M. and Jurka J.
The preparation of α-substituted, β-hydroxy piperidines and pyrrolidines: the total synthesis of febrifugine 3255
Burke S. D. Heap C. R. Porter W. J. and Song Y.
Cyclic hydropyran oligolides as preorganized ligand arrays: modular assembly of 18-, 24-, 36-, 48-, 54- and 72-membered rings via iteration and cyclooligomerization 343
Burrill, II L. C. see Braslau R. 7933
Burton D. J. see Davis C. R. 7237
Burton D. J. see Qiu W. 2745
Burton D. J. see Xue L. 1921
Burton G. see Ferrara A. 929
Busacca C. A. Dong Y. and Spinelli E. M.
A one step synthesis of thiazolines from esters 2935
Busacca C. A. and Dong Y.
A facile synthesis of 4-aryl-2,3-dihydropyrroles 3947
Busujima T. see Kobayashi S. 9221
Butcher J. W. Liverton N. J. Selnick H. G. Elliot J. M.

Smith G. R. Tebben A. J. Pribush D. A. Wai J. S. and Claremon D. A.
Preparation of 3-amino-1,4-benzodiazepin-2-ones via direct azidation with trisyl azide 6685
Butchko M. see Creary X. 579
Butkiewicz N. see Chu M. 7229
Butler D. N. Smits R. Evans D. A. C. Weerasuria K. D. V. and Warrener R. N.
New synthetic routes to molrac spacer and platform systems which incorporate the 1,4-benzoquinone chromophore 2157
Butler D. N. Tepperman P. M. Gau R. A. and Warrener R. N.
The synthesis of inward-facing 3,6-di(2-pyridyl)pyridazine ligands 2825
Butler K. E. see Mallory F. B. 7173
Butora G. Hudlicky T. Fearnley S. P. Gum A. G. Stabile M. R. and Abboud K.
Chemoenzymatic synthesis of the morphine skeleton via radical cyclization and a C_{10}–C_{11} closure 8155
Butsugan Y. see Araki S. 8417
Butt W. M. see Bols M. 2097
Bycroft B. W. see Nash I. A. 2625
Byerley A. L. J. Kenwright A. M. and Steel P. G.
Synthesis of C-disaccharides via glucal dimerisation 9093
Byers J. H. Whitehead C. C. and Duff M. E.
Addition of a sulfur-stabilized radical to electron-deficient alkenes via phenyl selenide transfer 2743
Bylinskaite J. see Mickevicius V. 3489

Caballero E. Guilhot F. López J. L. Medarde M. Sahagún H. and Tomé F.
Synthesis and Diels–Alder reactivity of simple 1-phenoxy-1,3-dienes 6951
Caballero E. see Medarde M. 2663
Caballero M. C. see Raposo C. 1485
Caballero Mª C. see Raposo C. 6947
Cabanas L. see Piettre S. R. 5881
Cabeza M. I. see Paz M. M. 9259
Cabrero A. see Gálvez N. 6197
Cabri W. Curini M. Marcotullio M. C. and Rosati O.
A high yield semisynthetic approach to 2'-*epi*-Taxol 4785
Caddick S. and Jenkins K.
A new dynamic resolution strategy for asymmetric synthesis 1301
Cadefau J. see Blériot Y. 7155
Cadilhac C. see Arnould J. C. 4523
Cafieri F. Fattorusso E. Mangoni A. and Taglialatela-Scafati O.
Dispacamides, anti-histamine alkaloids from Caribbean *Agelas* sponges 3587
Cahiez G. and Marquais S.
Highly chemo- and stereoselective Fe-catalyzed alkenylation of organomanganese reagents 1773
Cahiez G. see Riguet E. 5865
Cai D. Hughes D. L. and Verhoeven T. R.
A study of the lithiation of 2,6-dibromopyridine with butyllithium, and its application to synthesis of L-739,010 2537
Cai J. Nemoto H. Singaram B. and Yamamoto Y.
Facile reaction of *o*-carboranyllithium reagents with functionalized alkyl halides 3383
Cai J. and Soloway A. H.
Synthesis of carboranyl polyamines for DNA targeting 9283
Cai J. see Hale K. J. 4233
Cai J. see Hale K. J. 9345
Cai J. see Nemoto H. 539
Cai J. see Zeng X. 3009
Cai M. S. see Zhu X. X. 8549
Cai Y. M. see Asato A. E. 419
Cai D. see Bartnik R. 8751
Calderan A. see Ruzza P. 5191
Callot H. J. see Krattinger B. 7699
Calmes M. Daunis J. Mai N. and Natt F.
A convenient synthesis of optically active phenylglycine 379
Calvo D. Port M. Delpech B. and Lett R.
Total synthesis of forskolin—III. Studies related to an asymmetric synthesis 1023
Calvo D. see Delpech B. 1015
Calvo D. see Delpech B. 1019
Calvo K. C. Moore R. and Koser G. F.
Bis-ketol phosphate alkyl triesters: rate of initial ketol group hydrolysis 1169
Camerini R. Panunzio M. Bonanomi G. Donati D. and Perboni A.
Highly stereocontrolled synthesis of a novel tribactam by reaction of an ester enolate with an *N*-trimethylsilylimine 2467
Cameron J. M. see Banwell M. G. 525
Caminade A.-M. see Slany M. 9053
Campanini L. Duréault A. and Depezay J.-C.
One step synthesis of sulfur and nitrogen linked aza-disaccharide precursors from D-mannitol derived bis-aziridines 5095
Campbell J. R. see Ehrlich P. P. 7345
Campbell M. G. see Superchi S. 6061
Campbell R. M. see Liu A. 3785
Campos Neves A. S. see Salvador J. A. R. 687
Camps P. Font-Bardia M. Pérez F. Solà L. Solans X. and Vázquez S.
Low temperature X-ray diffraction analysis of 4,5,10,11-tetramethyl-heptacyclo[8.2.1.$1^{2,5}$.$1^{4,7}$.$1^{8,11}$.$0^{1,8}$.$0^{2,7}$]hexadecane: DSC, MM2 and ^{1}H NMR study of its [2 + 2]retrocycloaddition to an isomeric diene 8601
Camps P. Luque F. J. Orozco M. Pérez F. and Vázquez S.
Synthesis, chemical trapping and dimerization of tricyclo[3.3.0.$0^{3,7}$]oct-1(5)-ene, the consummate member of a series of pyramidalized alkenes 8605
Canan Koch S. S. see Bennani Y. L. 8109
Cañas A. I. see de Vargas E. B. 767
Canet J.-L. see Ripoche I. 3991
Cannon A. see Shawe T. T. 3823
Cao D. Kolshorn H. and Meier H.
Phenylethynyl- and phenylethenylmetacyclophane s 4487

Cao J. see Williams R. M. 5441
Cao J. see Wilson S. R. 775
Cao S. and Roy R.
Synthesis of glycopolymers containing GM_3-saccharide 3421
Cao X. and Mjalli A. M. M.
Combinatorial method for the synthesis of α-hydroxy phosphonates on Wang resin 6073
Cao X.-P. Chan T.-L. and Chow H.-F.
Direct conversion of dipropargylic sulfones into (*E*)- and (*Z*)-hex-3-ene-1,5-diynes by a modified one-flask Ramberg–Bäcklund reaction 1049
Capdevielle P. see Rousselet G. 8497
Capdevila J. H. see Heckmann B. 1425

Cappiello J. see Ghosh A. K. 3815
Capriati V. see Florio S. 4781
Captain L. F. Xia X. and Liotta D. C. Remote asymmetric induction in organocopper conjugate additions to 3-ketoacrylates 4293
Caracciolo M. see Reginato G. 1325
Caramella P. see Quadrelli P. 1909
Cardellicchio C. Iacuone A. Naso F. and Tortorella P. A novel route to enantiomerically pure sulfoxides through displacement of a carbon leaving group 6017
Cardellina, II J. H. see Bokesch H. R. 3259
Cardillo R. see Arnone A. 3903
Cardno M. and Bradley M. A simple multiple release system for combinatorial library and peptide analysis 135
Carducci M. Fioravanti S. Loreto M. A. Pellacani L. and Tardella P. A. Aziridination of α,β-unsaturated esters by (ethoxycarbonyl)nitrene 3777
Carlier V. see Vanwetswinkel S. 2761
Carlson R. G. see Hohman J. R. 8273
Carlson R. M. see Krasutsky P. A. 5673
Carofiglio T. Fornasier R. Lucchini V. Rosso C. and Tonellato U. Very strong binding and mode of complexation of water-soluble porphyrins with a permethylated β-cyclodextrin 8019
Caron G. see Zahouily M. 8387
Caron G. see Zamir L. O. 6435
Carpenter S. H. see Tamura S. Y. 4109
Carpentier J.-F. Pamart L. Maciewjeski L. Castanet Y. Brocard J. and Mortreux A. Kinetic resolution of racemic tricarbonyl(2-chloroanisole)chromium via palladium-catalysed asymmetric alkoxycarbonylation 167
Carpentier J.-F. see Bricout H. 6105
Carpentier J. F. see Couture A. 3697
Carpino L. A. see Wenschuh H. 5483
Carr M. A. see Chou T. S. 17
Carr R. E. see Fishwick C. W. G. 711
Carr R. E. see Fishwick C. W. G. 3915
Carr R. E. see Fishwick C. W. G. 5163
Carreño M. C. García Ruano J. L. Sanz G. Toledo M. A. and Urbano A. Mild and regiospecific nuclear iodination of methoxybenzenes and naphthalenes with *N*-iodosuccinimide in acetonitrile 4081
Carreño M. C. see Bartolomé J. M. 3187
Carretero J. C. Díaz N. Molina Mª L. and Rojo J. Unexpected synthesis of 1,6-dioxadecalins by desulfonylation of phenylsulfonyl[4,5]-spiroketals 3179
Carretero J. C. Gómez Arrayás R. and Storch de Gracia I. Stereoselective synthesis of hydroxypyrrolidines and hydroxypiperidines by cyclization of γ-oxygenated-α,β-unsaturated sulfones 3379
Carrington C. M. S. see Henry G. E. 8663
Carroll F. I. see Gonzalez J. 8655
Carroll P. J. see Davis F. A. 3267
Carrupt P.-A. see Zahouily M. 8387
Carter D. S. and Van Vranken D. L. Photooxidation of 2,2'-indolylindolines to 2,2'-biindoles: mild formation of ditryptophan crosslinks 5629
Carter K. W. see Harmata M. 6267
Carter M. L. see Pascal, Jr R. A. 8125
Caruthers M. H. see Greef C. H. 4451
Caruthers M. H. see Kofoed T. 6457
Caruthers M. H. see Zhao Z. 6239
Casaschi A. Grigg R. Sansano J. M. Wilson D. and Redpath J. Palladium catalysed cascade hydrostannylation–bis-cyclisation–intramolecular anion capture. Routes to bridged- and spiro-cyclic small and macrocyclic heterocycles 4413
Cases M. see Cossy J. 8173
Casey S. see Kremsky J. N. 4313
Cassagne C. see Lucet-Levannier K. 2007
Cassis P. R. see Yu D. W. 8845
Cassol T. M. see Dabdoub M. J. 831
Cassol T. M. see Dabdoub M. J. 9005
Castagnino C. and Vercauteren J. Castavinol, a new series of polyphenols from Bordeaux red wines 7739
Castanet Y. see Carpentier J.-F. 167
Castaño A. M. and Echavarren A. M. Palladium-catalyzed cross-coupling reaction of allyl carbonates with organo-stannanes 6587
Castaño A. M. Ruano M. and Echavarren A. M. Palladium-switchable bisnucleophiles 6591
Castedo L. see González C. 405
Castillón S. see Farràs J. 901
Castro E. see López-Calahorra F. 5019
Catalán C. A. N. see Joseph-Nathan P. 8093
Catalano J. G. see Hopper D. W. 7871
Catalo W. J. see Junk T. 3445
Caturla F. and Nájera C. (*E*)-*N*-Isopropyl-5-tosyl-4-pentenamide: a vinyl sulfone as precursor of a new δ-acyldienyl anion equivalent 2833
Caturla F. and Nájera C. Diiithiated (*E*)-*N*-isobutyl-4-tosyl-2-butenamide: an allyl sulfone dianion for the regio-specific γ-functional-ization of crotonamide dianion 4787
Cava M. P. see Mørkved E. H. 9149
Cavaleiro J. A. S. Nascimento G. M. S. F. C. Neves M. G. P. M. S. Pinto M. T. Silvestre A. J. D. and Vicente M. G. H. Oxidation of natural compounds catalyzed by Mn(III) porphyrin complexes 1893
Cavaleiro J. A. S. see Faustino M. A. F. 3569
Cavaleiro J. A. S. see Vicente M. G. H. 261
Cavalla D. Guéguen C. Nelson A. O'Brien P. Russell M. G. and Warren S. Chiral phosphine oxides and chiral esters in stereoselective intermolecular acylation reactions of phosphine oxides 7465
Cavé A. see Duret P. 7043
Cavé A. see Franck X. 1593
Cavé A. see Gleye C. 9301
Cavé A. see Pichon M. 7963
Cavelier F. and Enjalbal C. Studies of selective Boc removal in the presence of silyl ethers 5131
Cavicchioli M. Bouyssi D. Goré J. and Balme G. Palladium-mediated intra-

molecular cyclization of substituted pentynoic acids. A new route to γ-arylidene-butyrolactones 1429
Cazes B. see David K. 3333
Cazes B. see David K. 3335
Cebula R. E. J. Hanna M. R. Theberge C. R. Verbicky C. A. and Zercher C. K. Ylide-mediated bis-cyclopropane formation: a reversal in substrate-mediated facial selectivity 8341
Cebulska Z. see Bartnik R. 8751
Ceccarelli W. see Pinciroli V. 9365
Cejka J. see Dolensky B. 6939
Celebuski J. E. see Hill D. R. 787
Cerda-García-Rojas C. M. see Joseph-Nathan P. 8093
Cereghetti M. Arnold W. Broger E. A. and Rageot A. (*R*)- and (*S*)-6,6'-dimethyl- and 6,6'-dimethoxy-2,2'-diiodo-1,1'-biphenyls: versatile intermediates for the synthesis of atropisomeric diphosphine ligands 5347
Cereghetti M. Schmid R. Schönholzer P. and Rageot A. An efficient access to (*R*)- and (*S*)-6,6'-dimethoxy-2,2'-diiodo-1,1'-biphenyl 5343
Cerioni G. Biali S. E. and Rappoport Z. Hydrogen bonding in calix[*n*]arenes. A preliminary ^{17}O NMR study 5797
Cerreta F. see Alayrac C. 4507
Cervera M. and Marquet J. Direct coupling of carbon nucleophiles with *m*-dinitrobenzene: a novel fluoride promoted nucleophilic aromatic photosubstitution for hydrogen 7591
Cha J. K. see Lee J. 3663
Chabot B. M. see Barton D. H. R. 1755
Chai W. see Engler T. A. 6969
Chakhmakhcheva O. G. see van der Laan A. C. 7857
Chakrabarti D. see Pandey G. 2285
Champagne P. see Barbry D. 7725
Champoux J. A. see Roush W. R. 8989
Chan C. Scicinski J. J. Srikantha A. R. P. and Watson N. S. The squalestatins: synthesis of C-4 carboxamide derivatives 8925
Chan D. M. T. Promotion of reaction of N–H bonds with triarylbismuth and cupric acetate 9013
Chan E. W.-K. see Lam W. W.-L. 4733
Chan K. see Bhagwat S. S. 4627
Chan K. S. see Zhang H. 1043
Chan S. I. see Stowell M. H. B. 307
Chan T.-H. see Bryan V. J. 5341
Chan T.-L. see Cao X.-P. 1049
Chan T.-L. see Kwong C.-Y. 5913
Chan T.-L. see Ng M.-K. 2979
Chan T.-M. see Chu M. 7229
Chan T. Y. Chen A. Allanson N. Chen R. Liu D. and Sofia M. J. Solid phase synthesis of peptidoglycan monomers for the generation of a combinatorial library 8097
Chan W. C. see Boyd E. A. 1647
Chan W. C. see Nash I. A. 2625
Chand D. K. and Bharadwaj P. K. Size mismatch between two tripodal units: a new synthetic strategy for macrotricyclic cryptand 8443
Chand T. see Sharma M. L. 2279
Chandler N. M. see Curran T. P. 1933
Chandramouli N. see Sharma S. K. 5665
Chandraratna R. A. S. see Vuligonda V. 1941
Chandrasekar P. and Lash T. D. Versatile '3 + 1' syntheses of acenaphthoporphyrins, a new family of highly conjugated tetrapyrroles 4873
Chandrasekaran S. see Bhat S. 3581
Chandrasekhar S. Sumithra G. and Yadav J. S. Deprotection of mono and dimethoxy phenyl methyl ethers using catalytic amounts of DDQ 1645
Chandrasekhar S. see Yadav J. S. 6603
Chandrasekharam M. see Tso H.-H. 4189
Chandra Sheker Reddy A. Narsaiah B. and Venkataratnam R. V. Palladium (II) catalysed Claisen rearrangement: synthesis of inaccessible *N*-allyl-2(1H)-pyridones from 2-(allyloxy)pyridines 2829
Chandra Sheker Reddy A. Shanthan Rao P. and Venkataratnam R. V. Fluoro organics: a facile and exclusive synthesis of novel 2- or 4-trifluoromethyl(1H,5)-arylodiazepines 2845
Chaney S. T. see Lash T. D. 8825
Chang C.-J. see Sha C.-K. 3487
Chang C.-Y. see Sha C.-K. 6959
Chang H.-C. see Arai Y. 4381
Chang H.-T. and Sharpless K. B. A practical route to enantiopure 1,2-aminoalcohols 3219
Chang K. see Lee N. 2429
Chang R. K. and Kim K. Facile synthesis of nitriles from primary nitro compounds via nitrolic acids and their esters 7791
Chang S.-C. see Lai M.-L. 6149
Chang W.-L. see Lee S.-S. 4405
Chanon M. see Bernard-Henriet C. 2417
Chanon M. see Hada C. 3845
Chanon M. see Mattalia J.-M. 4717
Chao I. see Liu K.-T. 4173
Chapman K. T. see Hutchins S. M. 4865
Chapman K. T. see Hutchins S. M. 4869
Chapman K. T. see Willoughby C. A. 7181
Chappie T. A. Weekly R. M. and McMills M. C. Application of diazode-composition reactions in tandem with [2,3]-sigmatropic rearrangements to prepare substituted azabicyclic ring systems 6523
Chapron I. see Alayrac C. 4507
Charette A. B. Juteau H. Lebel H. and Deschênes D. The chemo- and enantio-selective cyclopropanation of polyenes: chiral auxiliary versus chiral reagent-based approach 7925
Charette A. B. and Giroux A. Asymmetric hydrogenation of *N*-tosylimines catalyzed by BINAP-ruthenium(II) complexes 6669
Charnsangavej C. see Doyle M. P. 4129
Charoenying P. Davies D. H. McKerrecher D. and Taylor R. J. K. A new stereocontrolled, pyrylium-based route to conjugated dienynes: the first synthesis of carduusyne A 1913
Charrouf-Chafchaouni Z. Maurin R. and Guillaume D. Thermal rearrangement of halogenated dimethylene-cyclobutane and methylene-cyclobutene derivatives 5099
Chassagnard C. see Rousselet G. 8497
Chatal J.-F. see Mishra A. K. 7515

Chatgilialoglu C. Alberti A. Ballestri M. Macciantelli D. and Curran D. P. Tris(trimethylsilyl)silane as mediator in the radical-based allylation reactions of allyl and 2-functionalized allyl phenyl sulfones 6391
Chatgilialoglu C. Ballestri M. Vecchi D. and Curran D. P. Synthesis of 2-functionalized allyl tris(trimethylsilyl)silanes 6383
Chatgilialoglu C. Ferreri C. Ballestri M. and Curran D. P. 2-Functionalized allyl tris(trimethylsilyl)silanes as radical-based allylating agents 6387
Chattarjee S. see Subramanyam C. 459
Chatterjee S. see Subramanyam C. 2315
Chaturvedi S. see Horn T. 743
Chaudhry U. see McGrath D. V. 6077
Chauhan M. Chuit C. Corriu R. J. P. and Reyé C. More information about the existence of siliconium ions 845
Chauret D. C. Durst T. Arnason J. T. Sanchez-Vindas P. San Roman L. Poveda L. and Keifer P. A. Novel steroids from *Trichilia hirta* as identified by nanoprobe INADEQUATE 2D-NMR spectroscopy 7875
Chautemps P. see Provent C. 1393
Chauvet F. Coste-Manière I. Martres P. Perfetti P. Waegell B. and Zahra J.-P. Synthesis of nor-norambracetal 3695
Chavan S. P. Venkatraman M. S. Sharma A. K. and Chittiboyina A. G. Corrigendum 5027
Chavan S. P. Ethiraj K. S. and Kamat S. K. Unusual Cope rearrangement of tricyclo[5.2.1.$0^{2,6}$]decadi-enone 2-carboxylic ester on acetalisation with ethylene glycol, PTSA 7827
Chavan S. P. Ravindranathan T. Patil S. S. Dhondge V. D. and Dantale S. W. An efficient synthesis of α-cuparenone 2629
Chavan S. P. Venkatraman M. S. Sharma A. K. and Chittiboyina A. G. Study of the reactivity profile of glycine Schiff's bases with dipolarophiles: application towards a concise synthesis of CCG-II 2857
Chavan S. P. Zubaidha P. K. Dantale S. W. Keshavaraja A. Ramaswamy A. V. and Ravindranathan T. Use of solid superacid (sulphated SnO_2) as efficient catalyst in facile transesterification of ketoesters 233
Chavan S. P. Zubaidha P. K. Dantale S. W. Keshavaraja A. Ramaswamy A. V. and Ravindranathan T. Facile deprotection of allyl esters mediated by solid superacid (sulphated SnO_2) 237
Chavan S. P. see Kalkote U. R. 6785
Chbani M. see Beugelmans R. 1603
Chen A. see Chan T. Y. 8097
Chen B. Yang C.-Y. and Ye D.-Y. Intramolecular Diels–Alder reaction of pyrazines with an alkenyl side chain 8205
Chen C. see Eisenberg S. W. E. 7683
Chen C.-H. see Lee S.-S. 4405
Chen D. Yu L. and Wang P. G. Lewis acid-catalyzed reactions in protic media. Lanthanide-catalyzed reactions of indoles with aldehydes or ketones 4467
Chen D. see Yu L. 2169
Chen D.-L. and Li C.-J. A *gem*-allyl dianion synthon in water 295
Chen D.-W. see Shu T. 5539
Chen G.-M. see Ramachandran P. V. 2205
Chen G.-M. see Ramachandran P. V. 3795
Chen H.-C. see Chou T. 7823
Chen H. G. Goel O. P. Kesten S. and Knobelsdorf J. A novel modification of the Ritter reaction using trimethylsilyl cyanide 8129
Chen J. see Katritzky A. R. 6631
Chen J. see Murray R. W. 805
Chen J. see Snider B. B. 6977
Chen J. see Thum O. 9017
Chen J. see Xiang Y. 3779
Chen J. J. see Liu W. 5325
Chen J. L. see Hungate R. W. 4113
Chen J. S. see Stratakis M. 4105
Chen L. see Kraus G. A. 7245
Chen M. see Hoye T. R. 3099
Chen M.-F. see Clennan E. L. 2911
Chen M.-H. and Abraham J. A. Free radical method for the synthesis of spiro-piperidinyl heterocycles 5233
Chen R. see Chan T. Y. 8097
Chen S. and Coward J. K. A general method for the synthesis of *N*-protected α-aminoalkylphosphinic acids 4335
Chen S. see Linderman R. J. 3819
Chen S.-H. First syntheses of C-4 methyl ether paclitaxel analogs and the unexpected reactivity of 4-deacetyl-4-methyl ether baccatin III 3935
Chen S.-H. see Gao Q. 3425
Chen S.-Q. see Hara S. 8511
Chen W. Flavin M. T. Filler R. and Xu Z.-Q. Introduction of α-fluorophosphonomethyl ether functionality and its application to the synthesis of fluorinated acyclic phosphonate nucleosides 8975
Chen W.-C. see Yao C.-F. 6339
Chen W.-H. Yuan D.-Q. and Fujita K. Bifunctional β-cyclodextrins with two imidazolyl groups specifically attached to C3 positions 7561
Chen X. see Comins D. L. 9275
Chen X. see Zeng X. 3009
Chen X. Y. see Menger F. M. 323
Chen Y. see Mitchell R. H. 5239
Chen Y. see Mitchell R. H. 6665
Chen Y.-J. De Clercq P. and Vandewalle M. Synthesis of new vitamin D_3 analogues with a decalin-type CD-ring 9361
Chen Y.-L. see Wang T.-C. 6369
Chen Y.-P. see Arai Y. 4381
Chen Z. Bradshaw J. S. and Lee M. L. A convenient synthesis of mono-6-hydroxy permethylated β-cyclodextrin via *tert*-butyldimethylsilylation 6831
Chen Z. see Zoretic P. A. 7909
Cheney D. P. see Graber M. A. 4635
Cheng D. see Lau W. Y. 4297
Cheng H. see Corey E. J. 2709
Cheng H. see Corey E. J. 3287
Cheng J. Gano J. E. and Morgan A. R. Low-valent titanium reductive coupling reactions of pyrrylaldehydes and pyrrylketones 2721
Cheng J. see Kobayashi J. 6775
Cheng J.-P. and Zheng Z. Carbon–halogen bond cleavage energies of polyhaloalkyl radical anions in solution 1457
Cheng K.-L. see Stoub D. G. 4927

Cheng Y. see Löwik D. W. P. M. 8253
Cheng Y. see Meth-Cohn O. 2679
Chengebroyen J. Pfeffer M. and Sirlin C. Palladium-assisted intramolecular formation of N-heterocycles by sp^2 N nucleophilic attack on η^3-allyl-Pd complexes generated by allene insertion into σ Pd–C bond 7263
Chertkov V. A. see Samoshin V. V. 3981
Cheruvallath Z. S. see Ravikumar V. T. 6643
Cheung E. T. see Headley A. D. 6673
Cheung H. T. A. see Larden D. W. 7581
Chiappe C. see Bellucci G. 4225
Chiappe C. see Bellucci G. 9089
Chiaroni A. see Sageot O. 7019
Chiavetto L. B. Guglielmetti G. Querci C. and Ricci M. Oxidation of isosafrole by sodium hypochlorite catalysed by manganese porphyrins: unusual competition between epoxidation and *O*-dealkylation 1091
Chiba T. see Kuramoto M. 3867
Chinchilla R. see Bernabeu M. C. 3595
Ching B. W. see Short K. M. 7489
Ching J. see Voivodov K. I. 5669
Chiodi O. Fotiadu F. Sylvestre M. and Buono G. Enantioselective reduction of ketones by borane catalysed by oxazaphospholidine oxides 39
Chitnavis A. A. see Khadilkar B. M. 1719
Chittiboyina A. G. see Chavan S. P. 2857
Chittiboyina A. G. see Chavan S. P. 5027
Cho B. P. and Zhou L. Attempted synthesis of *fjord*-region containing polycyclic fluoranthenes reveals a steric-driven double Wagner–Meerwein rearrangement 1535
Cho C.-W. see Park J. 6137
Cho C. Y. see Paikoff S. J. 5653
Cho S.-D. Choi W.-Y. Lee S.-G. Yoon Y.-J. and Shin S. C. Chemoselective reduction of highly-functionalized azidopyridazines to corresponding aminopyridazines using Fe/NH_4Cl in organic solvent–water two-phase solution 7059
Cho Y. L. see Jeong K.-S. 2795
Cho Y. M. see Jung M. E. 3
Chodorowski-Kimmes S. Beley M. Collin J.-P and Sauvage J.-P. Construction of multi-component systems by utilizing functionalized transition metal complexes as building blocks 2963
Chodounska H. see Kasal A. 6221
Choi H.-S. see Yu C.-M. 7095
Choi J. and Yoon N. M. An excellent nickel boride catalyst for the *cis*-selective semihydrogenation of acetylenes 1057
Choi J. see Sim T. B. 3137
Choi J. see Yoon N. M. 8527
Choi J. Y. and Kim Y. H. Highly diastereoselective addition of trimethylsilyl cyanide to chiral hydrazones in the presence of Et_2AlCl 7795
Choi J. Y. see Kim Y. H. 5543
Choi J. Y. see Kim Y. H. 8771
Choi K.-S. see Ha D.-C. 5723
Choi K. I. see Kang H.-Y. 7549
Choi S.-C. see Kang S.-K. 3723
Choi S.-Y. see Barton D. H. R. 2695
Choi W.-Y. see Cho S.-D. 7059
Choi W. J. see Kim D. 1433
Chomei N. see Adachi M. 8871
Chopra A. see Birman V. B. 5073
Chorghade M. S. see Hill D. R. 787
Choshi T. Sada T. Fujimoto H. Nagayama C. Sugino E. and Hibino S. Total syntheses of carazostatin and hyellazole by allene-mediated electrocyclic reaction 2593
Chou S.-S. P. Sun D.-J. Huang J.-Y. Yang P.-K. and Lin H.-C. Synthesis of sulfone-substituted thiophene chromophores for second-order nonlinear optics 7279
Chou S.-S. P. and Hsu C.-H. Synthetic applications of tricarbonyl[η^5-1-(phenylsulfonyl)cyclohexadienyl]-iron(I) complex 5373
Chou T. Haino T. Kuramoto M. and Uemura D. Isolation and structure of pinnatoxin D, a new shellfish poison from the Okinawan bivalve *Pinna muricata* 4027
Chou T. Kamo O. and Uemura D. Relative stereochemistry of pinnatoxin A, a potent shellfish poison from *Pinna muricata* 4023
Chou T. Kuramoto M. Otani Y. Shikano M. Yazawa K. and Uemura D. Pinnaic acid and tauropinnaic acid: two novel fatty acids composing a 6-azaspiro[4.5]-decane unit from the Okinawan bivalve *Pinna muricata* 3871
Chou T. and Chen H.-C. Type one and type two intramolecular Diels–Alder reactions of quinolono-*o*-quinodimethanes 7823
Chou T.-C. Yeh Y.-L. and Lin G.-H. A fragmentation–photocyclization approach towards homosecohexaprismane skeleton 8779
Chou T.-S. see Yang T.-K. 4537
Chou T. S. Becke L. M. O'Toole J. C. Carr M. A. and Parker B. E. Triethylamine poly(hydrogen fluorides) in the synthesis of a fluorinated nucleoside glycon 17
Chou Y.-L. see Mohan R. 3963
Chow H.-F. and Mak C. C. Facile preparation of optically active dendritic fragments containing multiple tartrate-derived chiral units 5935
Chow H.-F. see Cao X.-P. 1049
Chow H.-F. see Kwong C.-Y. 5913
Chow H.-F. see Ng M.-K. 2979
Chow H.-F. see Shing T. K. M. 3713
Chowdhury C. and Kundu N. G. Copper(I)-catalysed acylation of terminal alkynes 7323
Chowdhury S. and Roy S. Manganese (II) catalysed Hunsdiecker reaction: a facile entry to α-(dibromomethyl) benzenemethanol 2623
Christensen P. see Bols M. 2097
Christie B. A. see Armstrong S. K. 9373
Chu C. K. see Yang T.-F. 8849
Chu F. see DeFord J. 1925
Chu G. see Xu R. 1463
Chu G.-H. see Solladié G. 111
Chu H.-Y. see Yang T.-K. 4537
Chu M. Mierzwa R. Truumees I. King A. Patel M. Berrie R. Hart A. Butkiewicz N. DasMahapatra B. Chan T.-M. and Puar M. S. Structure of Sch 68631: a new hepatitis C virus proteinase inhibitor from *Streptomyces* sp. 7229
Chu M. Mierzwa R. Truumees I. King A. Patel M. Pichardo J. Hart A. Dasmahapatra B.

Das P. R. and Puar M. S. Sch 65676: a novel fungal metabolite with the inhibitory activity against the cytomegalovirus protease 3943
Chuang C.-T. see Wu H.-J. 7395
Chui H. M. P. see Montgomery J. 6839
Chuit C. see Chauhan M. 845
Chulia A. J. see Comte G. 2955
Chung I. H. F. see Shing T. K. M. 3713
Chung S. K. see Barton D. H. R. 3631
Chung W.-S. see Wu H.-J. 8209
Chung Y. J. see Kim B. H. 139
Chung Y. K. see Lee N. Y. 3145
Chupin V. V. see Mironov A. F. 6395
Churakov A. M. Ioffe S. L. Strelenko Y. A. and Tartakovsky V. A. Synthesis of 4*H*-[1,2,3]triazolo[4,5-*c*][1,2,5]oxadiazole 5-oxide and its *N*- and *O*-alkyl derivatives 8577
Churilova I. see Akhrem I. 5775
Cid M. M. Synthesis of 4-substituted-1,4-dihydropyridines 6033
Cieslak J. Sobkowski M. Kraszewski A. and Stawinski J. Aryl H-phosphonates—IV. A new method for internucleotide bond formation based on transesterification of aryl nucleoside H-phosphonate diesters 4561
Cimanga K. De Bruyne T. Pieters L. Claeys M. and Vlietinck A. Corrigendum 3217
Cimanga K. De Bruyne T. Pieters L. Claeys M. and Vlietinck A. New alkaloids from *Cryptolepis sanguinolenta* 1703
Cimino G. see Gavagnin M. 4259
Cimino G. see Ungur N. 3549
Cinquin C. see Bortolussi M. 8729
Cioffi E. A. Solvent-induced control of ultrasonic deuterium labelling 6231
Ciufolini M. A. Dong Q. Yates M. H. and Schunk S. Annulation of heterocyclic rings on aromatic templates: the quinone monoketal route 2881
Ciufolini M. A. Mitchell J. W. and Roschangar F. Facile palladium-mediated substitution of chlorine in 2-chloroquinolines 8281
Claßen A. see Wöhrle I. 7001
Clader J. W. see Shankar B. B. 4095
Claeys M. see Cimanga K. 1703
Claeys M. see Cimanga K. 3217
Claffey D. J. see Hoberg J. O. 3217
Claffey D. J. and Ruth J. A. Synthetic route to optically-pure metabolites of butadiene, and their chiral GC separation 7929
Claffey D. J. see Hoberg J. O. 2533
Clapés P. Valverde I. Jaime C. and Torres J. L. Enzymatic resolution of *Z*-γ,γ-di-*tert*-butyl-D,L-carboxyglutamic acid methyl ester 417
Clapés P. see Pera E. 3609
Clardy J. see Harrison B. 9151
Clardy J. see Lindquist N. 9131
Claremon D. A. see Butcher J. W. 6685
Claridge T. D. W. see Baldwin J. E. 6919
Clark A. J. Rooke S. Sparey T. J. and Taylor P. C. Synthesis of styryl tetrahydrofurans and tetrahydropyrans via addition of radicals to unsaturated sulfimides 909
Clark J. E. see Gala D. 611
Clark J. S. Dossetter A. G. and Whittingham W. G. Stereoselective synthesis of the bicyclic core structure of the highly oxidised sesquiterpene neoliacinic acid 5605
Clark S. L. see Singh P. R. 4117
Clarke C. F. see Shepherd J. A. 2395
Clarkson I. M. see Batsanov A. S. 2491
Clayden J. Westlund N. and Wilson F. X. Asymmetric induction using atropisomers: diastereoselective additions to 2-acyl-1-naphthamides 5577
Cleary G. see Hill D. R. 787
Clennan E. L. Chen M.-F. and Xu G. New potent trapping agents for the peroxidic intermediates formed in the reactions of singlet oxygen 2911
Clennan E. L. and Greer A. Steric and electronic effects on the partitioning of a persulfinyl intermediate along the physical quenching and chemical reaction channels 6093
Clerici A. Clerici L. and Porta O. A highly *dl*-stereoselective pinacolization of aromatic aldehydes mediated by titanium trichloride in dichloromethane 3035
Clerici L. see Clerici A. 3035
Clothier M. F. see Lee B. H. 6053
Cobb J. see Gerothanassis I. P. 3191
Cochran J. E. Wu T. and Padwa A. Synthesis of polysubstituted anilines using the Diels–Alder reaction of methyl 5-aminofuroate 2903
Codd G. A. see Kaya K. 6725
Cody W. L. see Kent D. R. 8711
Coe J. W. Vetelino M. G. and Bradlee M. J. Convenient preparation of *N*-substituted indoles by modified Leimgruber– Batcho indole synthesis 6045
Coetzee P. S. see Hooper G. J. 7135
Cohen S. see Gross Z. 7325
Cokley T. M. Marshall R. L. McCluskey A. and Young D. J. The solvent promoted addition of tetraallyltin to aldehydes: a convenient and chemoselective allylation procedure 1905
Cole D. L. see Krotz A. H. 1999
Cole D. L. see Ravikumar V. T. 6643
Collado M. I. Sotomayor N. Villa M.-J. and Lete E. Parham-type cyclization and nucleophilic addition—*N*-acyliminium ion cyclization sequences for the construction of the isoquinoline nucleus 6193
Collet H. Bied C. Mion L. Taillades J. and Commeyras A. A new simple and quantitative synthesis of α-aminoacid-*N*-carboxyanhydrides (oxazolidines-2,5-dione) 9043
Collignon N. see Al-Badri H. 2951
Collignon N. see Jubault P. 3679
Collin J.-P see Chodorowski-Kimmes S. 2963
Collington E. W. see Page P. C. B. 2515
Collins A. N. see Bloodworth A. J. 1885
Collot V. see Moutou J.-L. 1787
Colmenares L. U. see Simmons C. J. 4103
Colombo G. see Bernardi A. 8921
Colonna S. see Alphand V. 6117
Comina P. J. see Hodgson D. M. 5613

Comins D. L. Chen X. and Joseph S. P. Synthesis of 2,4-disubstituted *N*-acyl-5,6-dihydro-2-pyridones 9275
Comins D. L. Joseph S. P. and Zhang Y. Regio- and stereoselective intramolecular Heck reactions of *N*-acyl-2,3-dihydro-4-pyridones 793
Comins D. L. and Guerra-Weltzien L. Asymmetric addition of Grignard reagents to chiral 1-acylpyridinium salts: a chiral auxiliary study 3807
Commerçon A. see Bourzat J.-D. 6327
Commeyras A. see Collet H. 9043
Comte G. Allais D. P. Chulia A. J. Vercauteren J. and Bosso C. Phoeniceroside, the first natural bis-furanone propane derivative from *Juniperus phoenicea* L. 2955
Condom R. see Farèse A. 1413
Connan J. see Herrmann D. 1791
Connan J. see Lemoine S. 2837
Connolly T. J. Baldoví M. V. Mohtat N. and Scaiano J. C. Photochemical synthesis of TEMPO-capped initiators for 'living' free radical polymerization 4919
Consoli G. M. L. see Cunsolo F. 715
Conte V. Di Furia F. and Moro S. Synthesis of brominated compounds. A convenient molybdenum-catalyzed procedure inspired by the mode of action of haloperoxidases 8609
Contino C. Ollier M. Maurizis J. C. Lacombe J. M. and Pucci B. Synthesis of cotelomers derived from tris(hydroxymethyl)acrylamidomethane (THAM) bearing cytosine arabinoside moieties. Preliminary investigation of their biological activity 9049
Contreras J. see De Kimpe N. 3171
Coogan M. P. and Knight D. W. Intramolecular cyclisations of hydroxylamines derived from limonene: reverse-Cope or acid-catalysed reactions? 6417
Coogan M. P. see Atkinson R. S. 5179
Cook G. R. see Trost B. M. 7485
Cook J. H. see Xiao D. 1523
Cook J. M. see Gan T. 5033
Cook J. M. see Gan T. 5037
Cook J. M. see Van Ornum S. G. 7185
Cook P. D. see An H. 7233
Cook P. D. see Manoharan M. 7675
Cook S. D. and Sutherland J. D. Studies on the reactivity of bisglycoaldehyde phosphodiester in alkaline solution 5779
Cooke D. A. see Belt S. T. 4755
Cooper A. B. see Jao E. 5661
Cooper M. A. and Ward A. D. Corrigendum 4827
Cooper M. M. Lovell J. M. and Joule J. A. Indole-β-nucleophilic substitution—IX. Nitrogen nucleophiles: syntheses of hydroxycryptolepine, cryptolepine and quindoline 4283
Corbin F. see Alayrac C. 4507
Cordero F. M. see Machetti F. 4205
Cordoni A. see Bellucci G. 9089
Corey E. J. Daley D. C. and Cheng H. A structural analog of the protosterol cation is not a strong inhibitor of sterol biosynthesis 3287
Corey E. J. Noe M. C. and Grogan M. J. Experimental test of the [3 + 2]- and [2 + 2]-cycloaddition pathways for the bis-cinchona alkaloid–OsO_4 catalyzed dihydroxylation of olefins by means of $^{12}C/^{13}C$ kinetic isotope effects 4899
Corey E. J. Noe M. C. and Ting A. Y. Improved enantioselective dihydroxylation of bishomoallylic alcohol derivatives using a mechanistically inspired bis-cinchona alkaloid catalyst 1735
Corey E. J. and Cheng H. Conversion of a C_{20} 2,3-oxidosqualene analog to tricyclic structures with a five-membered C-ring by lanosterol synthase. Further evidence for a C-ring expansion step in sterol biosynthesis 2709
Corey E. J. and Gin D. Y. A convergent enantioselective synthesis of the tetrahydroisoquinoline unit in the spiro ring of ecteinascidin 743 7163
Corey E. J. and Helal C. J. Catalytic enantioselective synthesis of the second generation histamine antagonist cetirizine hydrochloride 4837
Corey E. J. and Helal C. J. Asymmetric synthesis of (*S*)-carbinoxamine. New aspects of oxazaborolidine-catalyzed enantioselective carbonyl reduction 5675
Corey E. J. see Noe M. C. 1739
Corlay H. Fouquet E. and Motherwell W. B. Observations on some $Pd^{(0)}$ catalysed intermolecular reaction of electron deficient alkylidene cyclopropanes with olefins: a novel route to highly functionalised skipped diene units 5983
Correa J. F. see Paz M. M. 9259
Corriu R. J. P. see Chauhan M. 845
Cory R. M. McPhail C. L. Dikmans A. J. and Vittal J. J. Macrocyclic cyclophane belts via double Diels–Alder cycloadditions: macroannulation of bisdienes by bisdienophiles. Synthesis of a key precursor to an [8]cyclacene 1983
Cory R. M. and McPhail C. L. Transformations of a macrocyclic cyclophane belt into advanced [8]cyclacene and [8]cyclacene triquinone precursors 1987
Cossío F. P. see Arrastia I. 245
Cossío F. P. see Arrastia I. 7143
Cossío F. P. see Ayerbe M. 3055
Cossy J. Cases M. and Gomez Pardo D. An easy access to substituted aminopyranones from L-pyroglutamic acid 8173
Cossy J. Poitevin C. Sallé L. and Gomez Pardo D. The thermal rearrangement of *N*-alkyl-*N*-vinylpropargylamines into 2-methylpyrroles. A new synthesis of annulated[*b*]pyrroles 6709
Cossy J. and BouzBouz S. A short access to (+)-ptilocaulin 5091
Coste J. see Galéotti N. 3997
Coste-Manière I. see Chauvet F. 3695
Costello C. A. Kreuzman A. J. and Zmijewski M. J. Selective deprotection of phthalyl protected amines 7469
Cotrait M. see Henze B. 5499
Coudret J. L. Zöllner S. Ravoo B. J. Malara L. Hanisch C. Dörre K. de Meijere A. and Waegell B. Role of cyclopropanes as activating groups during

oxidation reactions with RuO_4 generated *in situ* 2425
Coull J. M. see Polushin N. N. 3227
Coulston K. J. see Brown R. F. C. 6819
Court J. J. and Hlasta D. J. *ortho* Versus adjacent-benzylic directed lithiations of substituted *N,N*-diethyl-benzamides 1335
Cousseau J. see Leriche P. 5115
Cousson A. see Martin A. 7735
Coutrot P. Grison C. and Lecouvey M. Preparation of the phosphonic acid analogue of 3-deoxy-D-manno-2-octulosonic acid (KDO) 1595
Couture A. Deniau E. Grandclaudon P. and Lebrun S. Dramatically different photochemical behaviour of 1-aroyl-2-methylene piperidine and pyrrolidine derivatives. An expeditious synthesis of ruspolinone 7749
Couture A. Deniau E. Woisel P. Grandclaudon P. and Carpentier J. F. Base-induced cyclization of trimethoxy-*o*-aroyldi-phenylphosphoryl methyl-benzamide: a formal synthesis of (±) cherylline and (±) cherylline dimethylether 3697
Couturier D. see Rigo B. 485
Couty F. see Agami C. 4001
Coval S. J. see Phife D. W. 5227
Cowan D. O. see D'Arcangelis S. T. 2931
Coward J. K. see Chen S. 4335
Cowell J. K. see Booker-Milburn K. I. 2177
Cowen S. D. see Grieco P. A. 2699
Cox D. C. see Liu A. 3785
Cozzi P. G. Di Simone B. and Umani-Ronchi A. Highly diastereoselective addition of silyl enolates to chiral imines derived from (*S*)-valine methyl ester using lanthanide triflate 1691
Cozzi P. G. Papa A. and Umani-Ronchi A. Enantioselective addition of Et_2Zn to aldehydes promoted by a chiral Schiff base metal complex 4613
Craig D. Ford M. J. and Stones J. A. Formation of medium-ring diolides via intramolecular Diels–Alder reactions of dicarboxylic ester-tethered trienes 535
Craig D. C. see Black D. StC. 241
Creary X. Jiang Z. Butchko M. and McLean K. Silyl-substituted cyclopropyl carbenoids 579
Cressman E. N. K. see Keck G. E. 3291
Crévisy C. see Legoupy S. 1225
Crews P. see Abrell L. M. 2331
Crews P. see Abrell L. M. 8983
Crews P. see Harrison B. 9151
Crews P. see Sperry S. 2389
Crews P. see Wang G.-Y.-S. 8145
Crich D. Hwang J.-T. and Liu H. Optimizing the 5-*exo*/6-*endo* ratio of vinyl radical cyclizations through catalysis with diphenyl diselenide 3105
Crimmins M. T. see Zawacki F. J. 6499
Crimmins M. T. Huang S. and Guise-Zawacki L. E. Radical fragmentation of cyclobutanes: an approach to medium ring fused carbocycles 6519
Crimmins M. T. Wang Z. and McKerlie L. A. Rearrangement of cyclobutyl carbinyl radicals: total synthesis of the spirovetivane phytoalexin (±)-lubiminol 8703
Crimmins M. T. and Rafferty S. W. Regioselective and stereoselective reductive cleavage of 1,7-dioxaspiro-[5.5]undecane alcohols 5649
Critcher D. J. and Pattenden G. Synthetic studies towards patearmine, a novel thiazole-based 19-membered bis-lactone from *Mycale* sp. 9107
Crombie L. Darwish B. Jones R. C. F. Toplis D. and Begley M. J. Reactions between (*E*)-5,5'-dimesitylbifuranylidenedione and the Horner– Wittig reagent 9255
Crook S. see Blériot Y. 7155
Crook S. see Shilvock J. P. 8569
Crooks P. A. see Deo N. M. 1137
Crosby J. see Maddrell S. J. 6001
Crossley M. J. Try A. C. and Walton R. Synthesis of accurate distance models of the primary donor–primary acceptor pair of bacterial photosynthetic reaction centres 6807
Crotti P. Di Bussolo V. Favero L. Macchia F. and Pineschi M. A novel effective transition metal based salt-catalyzed azidolysis of 1,2-epoxides 1675
Crouch R. see Spaltenstein A. 1343
Crowe W. E. Goldberg D. R. and Zhang Z. J. Preparation of allylsilanes via cross-metathesis 2117
Crowley P. J. Howarth J. A. Owton W. M. Percy J. M. and Stansfield K. A practical, versatile difluorovinylcopper reagent 5975
Crowley P. J. Percy J. M. and Stansfield K. On the preparation and unusual reactivity of a potential difluorodienophile 8233
Crowley P. J. Percy J. M. and Stansfield K. Synthesis and reactivity of a fluorinated dienophile 8237
Crozet M. P. see Vanelle P. 3323
Crump R. A. N. C. see Pelter A. 1273
Csáky A. G. see Alvarez-Ibarra C. 6573
Cseri T. Békássy S. Bódás Z. Ágai B. and Figueras F. Acetylation of B15C5 crown ether on Cu modified clay catalysts 1473
Cueto S. see Vega J. A. 6413
Cui C. see Pitchumani K. 6251
Culshaw A. J. see Baldwin J. E. 6919
Cumming J. N. see Posner G. H. 815
Cumming J. N. see Posner G. H. 7225
Cunico R. F. Synthesis of triisopropyl α-(trimethylsilyloxy)propargyl stannanes 437
Cunsolo F. Consoli G. M. L. Piattelli M. and Neri P. Double-two-point and four-point intramolecular bridging of *p-tert*-butylcalix[8]arene 715
Curci R. D'Accolti L. Dinoi A. Fusco C. and Rosa A. Selective oxidation of *O*-isopropylidene derivatives of diols to 2-hydroxy ketones employing dioxiranes 115
Curci R. Dinoi A. Fusco C. and Lillo M. A. On the triggering of free radical reactivity of dimethyldioxirane 249
Curini M. see Cabri W. 4785
Curran D. P. see Chatgilialoglu C. 6383
Curran D. P. see Chatgilialoglu C. 6387
Curran D. P. see Chatgilialoglu C. 6391

Curran D. P. see Thayumanavan S. 2899
Curran T. P. Chandler N. M. Kennedy R. J. and Keaney M. T. *N*-α-benzoyl-*cis*-4-amino-L-proline: a γ-turn mimetic 1933
Curran T. P. see Herrick R. S. 5289
Curtet C. see Mishra A. K. 7515
Curtis J. M. see Hu T. 7671
Cusack K. P. see Linderman R. J. 6649
Cutrona K. J. and Sanderson P. E. J. The synthesis of thrombin inhibitor L-370,518 via an α-hydroxy–β-lactam 5045
Czernecki S. Ayadi E. and Xie J. Stereocontrolled synthesis of 2-amino-2-deoxy-α-D-C-glycopyranosides by radical cyclization reactions 9193
Czernecki S. Franco S. Horns S. and Valéry J.-M. Studies directed towards the synthesis of miharamycin B 4003
Czernecki S. Hoang A. and Valéry J.-M. A novel 2'-deoxynucleoside designed for enhanced recognition of A.T. base-pairs 8857

Dabdoub M. J. Cassol T. M. and Barbosa S. L. Synthesis of ketene butyltelluro(phenylseleno)acetals by the Al/Te exchange reaction 831
Dabdoub M. J. Cassol T. M. and Batista A. C. F. Regiospecific hydroselenation of terminal acetylenes using aluminum phenylselenolate anions 9005
Dabdoub M. J. see Silveira C. C. 9173
D'Accolti L. see Curci R. 115
D'Achille R. see Righi G. 6893
da Fonseca Mª O. C. F. see Urones J. G. 1659
Dahanukar V. H. see Rychnovsky S. D. 339
Dahl O. see Kehler J. 8041
Dahuron N. see Langlois N. 3993
Dai J.-P. Sodeoka M. and Shibasaki M. Determination of the C-7, 9, 12, 13, 17 and 18 stereochemistries of tautomycetin. Synthesis of the tautomycetin degradation product 491
Dai L.-X. see Wang D.-K. 4187
Dai W.-C. see Lee A. S.-Y. 495
Dai W.-M. Zhu H. J. and Hao X.-J. Chiral ligands derived from *Abrine*—III. Asymmetric Pictet–Spengler reaction of *Abrine* methyl ester and synthesis of chiral 1,2,3,4-tetrahydro-β-carbolines as promoters in addition of diethylzinc toward aromatic aldehydes 5971
Dai W.-M. and Fong K. C. First synthesis of *cis*-enediynes from 1,5-diynes by an acid-mediated allylic rearrangement 8413
Dailey W. P. see Golobish T. D. 3239
Dainty R. F. see Harrowven D. C. 3607
Dainty R. F. see Harrowven D. C. 7659
Dakova B. see Largeron M. 7499
Daley D. C. see Corey E. J. 3287
Dalla V. and Pale P. Chemistry of 3,4-epoxy-2-methylene oxolanes: highly diastereoselective electrophilic additions 2777
Dalla V. and Pale P. Chemistry of 3,4-epoxy-2-methylene oxolanes: a new synthesis of furanes and dihydrofuranes 2781
Dalleu S. see Farèse A. 1413
Dall'Oglio E. L. see Rezende M. C. 5265
Daloze D. see Klein D. 7519
Daluge S. M. see Andersen M. W. 8147
Dambrin V. Villiéras M. Moreau C. Amri H. Toupet L. and Villiéras J. Copper(I) mediated highly diastereoselective conjugate addition of Grignard reagents to 2-silyloxycyclopentenecarboxylates 6323
Damm W. see Roth M. 351
Danelon G. O. Mata E. G. and Mascaretti O. A. Novel synthesis of 6,6-dibromo-2'-*Z*-chloromethyl and 2'-*Z*-bromomethyl anhydropenicillins from 6,6-dibromo 2β-(chloromethyl) and 2β-(bromomethyl)-2α-methyl-penam-3α-carboxylic acid via anhydropenicillin rearrangement 4431
Dang T. see Okuro K. 2713
Danieli B. see Appendino G. 7837
Danion D. see Denniel V. 5111
Danion-Bougot R. see Denniel V. 5111
Danks T. N. see Ackland M. J. 691
Dannaldson J. see Kim W. 5337
Dannaldson J. see Kim W. 6425
D'Annibale A. Pesce A. Resta S. and Trogolo C. Reaction of 2,2,6-trimethyl-4*H*-1,3-dioxin-4-one with imines: an easy route to enamides 7429
Dantale S. W. see Chavan S. P. 233
Dantale S. W. see Chavan S. P. 237
Dantale S. W. see Chavan S. P. 2629
D'Arcangelis S. T. and Cowan D. O. 2-(1,3-Benzodithiol-2-ylidene)-1,3-benzoxathiole (dibenzo-oxatrithiafulvalene, DBOTTF): the first tetraheterofulvalene containing oxygen 2931
Dardashti L. J. see Bennani Y. L. 8109
Dare S. Ducroix B. Bernard S. and Nicholas K. M. Chemo-, regio- and stereoselective addition of nitrile oxides to cobalt-coordinated 1,3-enynes 4341
Darkin-Rattray S. J. see Singh S. B. 8077
Darlak K. see Spatola A. F. 591
Darlington W. H. see Romero A. G. 2361
Darses S. Jeffery T. Genet J.-P. Brayer J.-L. and Demoute J.-P. Cross-coupling of arenediazonium tetrafluoroborates with arylboronic acids catalysed by palladium 3857
Dart M. J. see Evans D. A. 1957
Darwish A. D. see Benito A. M. 1085
Darwish B. see Crombie L. 9255
Das A. R. see Ranu B. C. 1109
Das D. see Sengupta S. 8815
Das P. see Pandey G. 3175
Das P. R. see Chu M. 3943
Das S. Pal A. and Mukherjee D. A stereocontrolled total synthesis of (±)-Δ^2-cedrene 4421
Das S. K. see Sarkar T. K. 6607
Das S. K. see Sarkar T. K. 8627
DasMahapatra B. see Chu M. 3943
DasMahapatra B. see Chu M. 7229
Dat Y. see Lefèvre V. 7017
Dat Y. see Systermans A. 3317
Datta R. see Bhattacharjee M. 3579
DattaGupta A. and Singh V. K. Catalytic enantioselective allylic oxidation of olefins with copper complexes of chiral nonracemic bis(oxazolinyl)pyridine type ligands 2633
DattaGupta A. see Sekar G. 8435
Daube M. see Baeschlin D. K. 1591

Daubié C. and Mutti S. Expedient enantiospecific synthesis of RP 73613: a new selective nonpeptide NK1 antagonist 7743
Daubié C. see Mutti S. 3125
Daubié C. see Mutti S. 8743
Daunis J. see Calmes M. 379
D'Auria M. and Mauriello G. Photochemical dichloromethylation of methylarenes 8217
Dauvergne J. see Magnin G. C. 7833
Dave R. H. see Hosangadi B. D. 6375
Davenport K. G. see Zhao S.-H. 2725
David D. M. O'Meara G. W. and Pyne S. G. Palladium catalysed rearrangement of allylic sulfoximines: synthesis of γ-amino α,β-unsaturated ketones and esters 5417
David K. Ariente C. Greiner A. Goré J. and Cazes B. Catalytic osmylation of allenic compounds. Synthesis of α-hydroxyketo amino acid precursors 3335
David K. Greiner A. Goré J. and Cazes B. Oxidation of functional olefines: synthesis of protected amino acids bearing a terminal α-hydroxyketo group 3333
Davies D. H. see Charoenying P. 1913
Davies D. H. see Graham A. E. 7445
Davies D. R. see Dussault P. H. 463
Davies G. M. Hitchcock P. B. Loakes D. and Young D. W. Synthesis of reactive γ-lactams related to penicillins and cephalosporins 5601
Davies H. M. L. Bruzinski P. R. and Fall M. J. Effect of diazoalkane structure on the stereoselectivity of rhodium(II)(*S*)-*N*-(arylsulfonyl)prolinate catalyzed cyclopropanations 4133
Davies H. M. L. and Doan B. D. Asymmetric synthesis of the tremulane skeleton by a tandem cyclopropanation/Cope rearrangement 3967
Davies I. W. Senanayake C. H. Larsen R. D. Verhoeven T. R. and Reider P. J. Application of a Ritter-type reaction to the synthesis of chiral indane-derived C_2-symmetric bis(oxazolines) 813
Davies I. W. Senanayake C. H. Larsen R. D. Verhoeven T. R. and Reider P. J. Application of indane-derived C_2-symmetric bis(oxazolines) in two-point binding asymmetric Diels–Alder reactions 1725
Davies M. R. see Bell D. 3895
Davies-Coleman M. T. see Hooper G. J. 7135
Dávila A. Ramezanian M. S. Fronczek F. R. and McLaughlin M. L. 3 + 2 Cycloaddition via a Diels–Alder/retro-Diels–Alder sequence: tandem cyclopentadienyl annulation of a 1,5-cyclooctadiyne synthetic equivalent 2517
Dávila R. M. see Sessler J. L. 6469
Davis A. P. Muir J. E. and Plunkett S. J. Supersilylating agents from chlorosilanes 9401
Davis B. Bell A. A. Nash R. J. Watson A. A. Griffiths R. C. Jones M. G. Smith C. and Fleet G. W. J. L-(+)-Swainsonine and other pyrrolidine inhibitors of naringinase: through an enzymic looking glass from D-mannosidase to L-rhamnosidase? 8565
Davis B. see Shilvock J. P. 8569
Davis C. R. and Burton D. J. Stereoselective preparation of (*Z*)-α,β-difluorostyrenes 7237
Davis F. A. Boyd R. Zhou P. Abdul-Malik N. F. and Carroll P. J. (+)-*trans*-Camphenesulfonamide: a novel enantiomerically pure primary sulfonamide 3267
Davis F. A. Liu H. and Reddy G. V. 2-Methyl *N*-(*p*-toluenesulfinyl)-aziridine-2-carboxylic acid: asymmetric synthesis of α-methylphenylalanine and α-methyl-β-phenylserine 5473
Davis F. A. and Qi H. Asymmetric synthesis of 2-deoxy-2-fluoro-γ-aldonolactones and their conversion to 2-deoxy-2-fluoropentoses 4345
Davis F. A. and Reddy G. V. Aziridine-2-carboxylic acid mediated asymmetric synthesis of D-*erythro*- and L-*threo*-sphingosine from a common precursor 4349
Davis, Jr J. H. and Madura J. D. Synthesis and computational evaluation of a boronium ion analogue of the tropane ring system 2729
Dayan S. see Rozen S. 531
De A. see Bhatia B. 7311
De S. K. see Dhara M. G. 8001
de Alba E. see Aceña J. L. 3043
De Angelis F. see Bonadies F. 7129
Deans R. and Rotello V. M. Model systems for flavoenzyme activity. 2-Aminopyridines as spectroscopic models for flavoenzyme active sites 4435
Debenham J. S. see Rodebaugh R. 5477
Debitus C. see Bourguet-Kondracki M.-L. 3861
Débitus C. see Fretté X. C. 2959
De Bruyne T. see Cimanga K. 1703
De Bruyne T. see Cimanga K. 3217
Decalogne F. see Mutti S. 3125
De Cian A. see Hajek F. 1401
De Cian A. see Hosseini M. W. 1405
De Clercq P. see Chen Y.-J. 9361
De Clercq P. J. see Wang J. 3395
Decroix B. see Pigeon P. 7707
DeFord J. Chu F. and Anslyn E. V. Dimerization constants for phosphoric acid diesters 1925
Defrère L. see Krief A. 2667
Defrère L. see Krief A. 8011
Defrère L. see Krief A. 8015
de Frutos Ó. and Echavarren A. M. Syntheses of fenanthroviridone, gilvocarcin BE-12406X_2, and antibiotic WS 5995B based on the palladium and copper catalyzed coupling of organostannanes with bromoquinones 8953
Degl'Innocenti A. see Mordini A. 5209
Degl'Innocenti A. see Reginato G. 1325
DeGrado W. F. see Rabanal F. 1347
DeGrado W. F. see Suich D. J. 6653
de Groot A. see Griepink F. C. 411
de Groot D. see Bakkeren F. J. A. D. 8003
Deguchi D. see Taniguchi Y. 3465
Deguchi N. see Shiozaki M. 3875
DeHaan J. M. see Rood G. A. 157
Dehmlow E. V. and Heiligenstädt N. Dimethyldioxirane oxidations of some cyclopropanes 5363
Deicke P. see Klar U. 4141
Dejikhangsar T. D. see Yu D. W. 8845

Dekhane M. Douglas K. T. and Gilbert P.
A novel convenient route to the naturally occurring 3-oxoacyl-L-homoserinelactones and related bacterial autoinducers 1883
De Kimpe N. Boelens M. and Contreras J.
Rearrangement of 5-(bromomethyl)-1-pyrrolinium salts into functionalized piperidines 3171
De Kimpe N. see Kulinkovich O. 1095
de Koning C. B. see Michael J. P. 9403
de la Cruz P. Díez-Barra E. Loupy A. and Langa F.
Silica gel catalysed Knoevenagel condensation in dry media under microwave irradiation 1113
Delaigue X. see Hajek F. 1401
Delaloge F. see Muller B. 3313
Delanghe N. C. see Barton D. H. R. 1555
Delanghe N. C. see Barton D. H. R. 8137
Delarge J. see Masereel B. 7253
de las Heras M. A. see Eames J. 1117
de las Heras M. A. see Eames J. 4077
de las Heras M. A. see Eames J. 4581
Delgado M. see Alvarez E. 2865
Delisser V. M. see Hale K. J. 9345
Dell A. see Wong-Lun-Sang S. 3329
Della E. W. and Knill A. M.
Synthesis of heterocycles. Construction of the 1-azabicyclo[2.2.1]heptyl system by sequential ring-closure of acyclic β-ammonio substituted radicals 5805
Della E. W. see Banks J. T. 8059
del Mar Lleó M. see Farràs J. 901
deLong M. A. see Wender P. A. 7687
de los Santos J. M. see Palacios F. 1289
Deloux L. and Srebnik M.
A highly stereocontrolled formal synthesis of *rac*-chokols A and G from a common *gem*-borazircon-ocene intermediate 2735
Delpech B. Calvo D. and Lett R.
Total synthesis of forskolin—I 1015
Delpech B. Calvo D. and Lett R.
Total synthesis of forskolin—II 1019
Delpech B. see Calvo D. 1023
de Lucas A. I. Martín N. Sánchez L. and Seoane C.
The first dumbbell-type C_{60} dimer connected by a double donor spacer 9391
Demailly G. see Glaçon V. 3683
de Meijere A. see Coudret J. L. 2425
De Mesmaeker A. see Wendeborn S. 5511
Demiç S. see Demir A. S. 407
De Mico A. Margarita R. Mariani A. and Piancatelli G.
Radical additions to olefins in the presence of iodobenzene-diacetate: an easy route to alkyl dithiocyanates 1889
Demir A. S. Tanyeli C. Sesenoglu Ö. Demiç S. and Evin Ö. Ö.
A simple synthesis of 1-aminophosphonic acids from 1-hydroxyiminophosphonates with $NaBH_4$ in the presence of transition metal compounds 407
Demonceau A. Lemoine C. A. and Noels A. F.
Osmium-catalysed cyclopropanation of olefins 1025
Demoulin V. see Klein D. 7519
Demoute J.-P. see Darses S. 3857
De Napoli L. see Adinolfi M. 5007
Dence C. S. see Mishani E. 319
Deng J. Hamada Y. and Shioiri T.
A new synthesis of cyclotheonamide B via guanidination of ornithine 2261
Deng N. see Garcia M. E. 8313
den Hartog J. A. J. see van Maarseveen J. H. 8249
den Hartog M. see Muller B. 3313
Deniau E. see Couture A. 3697
Deniau E. see Couture A. 7749
Deniaud D. see Negriolli J. 5365
Denieul M.-P. Quiclet-Sire B. and Zard S. Z.
A synthetically useful source of propargyl radicals 5495
Denis C. Laignel B. Plusquellec D. Le Marouille J.-Y. and Botrel A.
Highly regio- and stereo-selective reductions of carbonyl compounds in aqueous glycosidic media 53
Denisenko M. V. Pokhilo N. D. Odinokova L. E. Denisenko V. A. and Uvarova N. I.
Ruthenium tetroxide oxidation of 3β-acetoxy-28-hydroxy-18-lupene to tricyclic products 5187
Denisenko V. A. see Denisenko M. V. 5187
Denk M. K. Gupta S. and Ramachandran R.
Aromatic phosphenium cations 9025
Denniel V. Bauchat P. Danion D. and Danion-Bougot R.
Hydroboration of vinylglycine and allylglycine as a route to boron-derivatives of α-amino acids 5111
Dent, III W. H. see Fields S. C. 1967
Deo N. M. and Crooks P. A.
Regioselective alkylation of *N*-(diphenylmethylidine)-3-(aminomethyl)pyridine: a simple route to minor tobacco alkaloids and related compounds 1137
de Oliveira C. M. A. Porto A. M. Bittrich V. Vencato I. and Marsaioli A. J.
Floral resins of *Clusia* spp.: chemical composition and biological function 6427
de Oliveira Filho A. P. Moreira B. G. Moran P. J. S. and Rodrigues J. A. R.
Oxidations with acyl nitrates: a simple and rapid method for preparing quinones, ketones and aldehydes 5029
de Pascual-Teresa B. and Houk K. N.
The ionic Diels–Alder reaction of the allyl cation and butadiene: theoretical investigation of the mechanism 1759
Depezay J.-C. see Campanini L. 5095
Depezay J.-C. see McCort I. 7717
Depezay J.-C. see Poitout L. 1609
Depezay J.-C. see Poitout L. 1613
De Riccardis F. see Izzo I. 4775
De Risi C. see Barco A. 7599
Derkacheva V. M. see Barkanova S. V. 1637
De Rosa M. see Soriente A. 8007
Desai J. see Jao E. 5661
de Sainte Claire V. see Rigby J. H. 2553
De Sarlo F. see Machetti F. 4205
Desarbre E. and Mérour J.-Y.
Palladium heteroannulation process for synthesis of substituted pyrrolo-[2,3-*b*]pyridin-3-ones 43
Deschênes D. see Charette A. B. 7925
Desfossés H. see Spino C. 6503

Deshpande V. H. see Ponde D. 4605
De Silva A. P. see Ayadim M. 7039
Desimoni G. Faita G. and Righetti P. P.
The first enantioselective synthesis of both Diels–Alder enantiomers with the same bis(oxazoline)–magnesium perchlorate chiral catalyst 3027
Deslongchamps G. see Lonergan D. G. 6109
Deslongchamps G. see Mink D. 7035
Desmaële D.
Unexpected alkylation reaction of amines, acids and phenols by alkyl (triphenylphosphoranylidene)acetates 1233
de Souza R. F. see Monteiro A. L. 1157
Desper J. see Breslow R. 2541
Desponds O. and Schlosser M.
The activation barrier to axial torsion in 2,2'-bis(diphenylphosphino)-biphenyl 47
Desponds O. see Mongin F. 2767
Desvergne J. P. see Henze B. 5499
de Tullio P. see Masereel B. 7253
Devadder S. Verheyden P. Jaspers H. C. M. Van Binst G. and Tourwé D.
The γ-methyl-*E*-olefin as isosteric replacement of the peptide bond 703
de Vargas E. B. and Cañas A. I.
From *N*-*n*-butyl-2,6-dinitroaniline to a fused heterocyclic *N*-oxide 767
Devasagayaraj A. see Kishan Reddy Ch. 4495
Devasthale P. V. see Hanessian S. 987
de Vera J. see Ravelo J. L. 2869
Devine P. N. Dolling U.-H. Heid, Jr R. M. and Tschaen D. M.
Stereoselective synthesis of 2-aryloxy acids from lactamide derived esters of racemic α-halo carboxylic acids 2683
Devlin T. see Iyer R. P. 1539
Devlin T. see Iyer R. P. 1543
De Vos D. E. see Sels B. F. 8557
DeWitt S. H. see MacDonald A. A. 4815
Dewynter G. see Abdaoui M. 5695
Dhara M. G. De S. K. and Mallik A. K.
A facile transformation of *E*-3-benzylideneflavanones to 3-(α-hydroxybenzyl)flavones 8001
Dhawan S. N. see Gupta S. C. 8913
Dhokte U. P. Soundararajan R. Ramachandran P. V. and Brown H. C.
A general, efficient, convenient synthesis of chiral bis(terpenyl)haloborane reagents, valuable for asymmetric synthesis via organoboranes 8345
Dhokte U. P. and Brown H. C.
Isopinocampheylbromoborane, a new promising reagent for the asymmetric hydroboration of prochiral alkenes 9021
Dhokte U. P. see Kulkarni S. V. 1763
Dhondge V. D. see Chavan S. P. 2629
Dhople V. M. see Ranganathan S. 5199
Diaz M. J. see Soderquist J. A. 2561
Díaz M. T. see Alvarez E. 2865
Díaz N. see Carretero J. C. 3179
Díaz-Ortiz A. Prieto P. Loupy A. and Abenhaïm D.
A short and efficient synthesis of ketene *O,O*- and *S,S*-acetals under focused microwave irradiation and solvent-free conditions 1695
Dibble P. W. see Yu D. W. 8845
Di Bella M. see Braghiroli D. 7319
DiBenedetto D. J. see Gala D. 611
DiBenedetto D. J. see Gala D. 8117
Di Bussolo V. see Crotti P. 1675
Di Campli C. see Bonadies F. 1899
Dickinson L. C. see Ionescu D. 1559
Didelot M. see Arnould J. C. 4523
Didierjean C. see André F. 183
Didiuk M. T. see Morken J. P. 3613
Diederichsen U. and Schmitt H. W.
Self-pairing PNA with alternating alanyl/homoalanyl backbone 475
Dierkes P. see Sablong R. 4933
Dieter R. K. Nice L. E. and Velu S. E.
Oxidation of α,β-enones and alkenes with oxone and sodium halides: a convenient laboratory preparation of chlorine and bromine 2377
Dieter R. K. see Fry D. F. 6227
Dietrich H. see Espinosa J.-F. 1467
Díez D. see Urones J. G. 1659
Díez-Barra E. see de la Cruz P. 1113
Di Furia F. see Conte V. 8609
Di Grandi M. J. and Tilley J. W.
The direct preparation of protected hydrazines from alcohols via Mitsunobu chemistry 4327
Di Grandi M. J. and Tilley J. W.
Corrigendum 8261
Dikmans A. J. see Cory R. M. 1983
Dillon J. L. see Silverberg L. J. 771
Dillon K. see Liu A. 3785
Dimitrov V. Kostova K. and Genov M.
Anhydrous cerium(III) chloride—effect of the drying process on activity and efficiency 6787
Dinaut A. N. see Taylor S. D. 8089
Din Belle D. see Lounasmaa M. 1513
Ding C. Z.
A convenient diastereoselective synthesis of β-aryl-β-aminoalcohols 945
Ding C. Z. and Miller A. V.
Synthesis of 4-(*N*-alkyl-*N*-heteroaryl)amino-3,4-dihydro-3-hydroxy-2,2-dimethyl-2*H*-1-benzopyran-6-carbonitrile derivatives via an unusual 1,4-oxygen to nitrogen heteroaryl migration 4447
Ding P. Y. see Zhu X. X. 8549
Ding Q. see Kozikowski A. P. 3279
Ding T. see Wei Y. 731
Dinh P. M. Howarth J. A. Hudnott A. R. Williams J. M. J. and Harris W.
Catalytic racemisation of alcohols: applications to enzymatic resolution reactions 7623
Dinh T. Q. and Armstrong R. W.
Synthesis of ketones and aldehydes via reactions of Weinreb-type amides on solid support 1161
Dinoi A. see Curci R. 115
Dinoi A. see Curci R. 249
Diouf O. see Masereel B. 7253
d'Ischia M.
Oxygen-dependent nitration of ethyl linoleate with nitric oxide 5773
d'Ischia M. see Napolitano A. 4241
d'Ischia M. see Napolitano A. 6799
Di Simone B. see Cozzi P. G. 1691
Distefano M. D. see Gaon I. 8833
Distefano M. D. see Turek T. C. 4845

Dizière R. and Savignac P. A new simple method for the synthesis of 1-alkynylphosphonates using $(EtO)_2P(O)CCl_3$ as precursor 1783
Djaté F. see Noé E. 5701
Djaté F. see Noé E. 8823
Doan B. D. see Davies H. M. L. 3967
Dobashi A. see Mimaki Y. 1245
Dobretsova E. K. see Samoshin V. V. 3981
Dogné J. M. see Masereel B. 7253
Doherty A. M. see Kent D. R. 8711
Doi T. Komatsu H. and Yamamoto K. Diastereoselective hydroformylation of certain protected allylic alcohols 6877
Dolan S. see Markó I. E. 2089
Dolan S. see Markó I. E. 2507
Dolbier, Jr W. R. and Rong X. X. The kinetic impact of vinylic fluorine substituents on 5-hexenyl radical cyclizations 5321
Dolensky B. Kvicala J. Paleta O. Cejka J. and Ondrácek J. Preparation of new trifluoromethyl substituted tri- and tetracyclic heterocycles with peganin skeleton from a methyl 3,3,3-trifluoropyruvate/2-aminobenzylamine adduct 6939
Dolling U.-H. see Brands K. M. J. 2919
Dolling U.-H. see Devine P. N. 2683
Dolotova O. V. see Barkanova S. V. 1637
Dolphin D. see Karunaratne V. 603
Dombrowski A. W. see Singh S. B. 8077
Domingo L. R. Arnó M. and Andrés J. The tandem Diels–Alder reaction of dimethyl acetylenedicarboxylate to bicyclopentadiene. A theoretical study of the molecular mechanisms 7573
Domínguez E. see Loupy A. 8177
Domon L. Vogeleisen F. and Uguen D. A convenient preparation of elements of the stereotriade 2773
Donaldson W. A. and Shang L. Dihydroxylation/glycol cleavage of tricarbonyl(triene)-iron complexes 423
Donaldson W. A. see Prahlad V. 9169
Donati D. Fusi S. and Ponticelli F. Photocycloaddition on 2-methyloxazolo[5,4-*b*]pyridine: a route to the oxazolo[5,4-*b*]azocine system 5783
Donati D. see Camerini R. 2467
Dondoni A. Boscarato A. and Zuurmond H. Synthesis of *C*-disaccharides from *C*-formyl glycosides 7587
Dong H. see Kadota S. 7283
Dong Q. see Ciufolini M. A. 2881
Dong Y. see Busacca C. A. 2935
Dong Y. see Busacca C. A. 3947
Dong Y. see Ramig K. 443
Dong Y. see Van Arnum S. D. 8659
Donini S. see Vanelle P. 3323
Donohoe T. J. Garg R. and Moore P. R. On the dihydroxylation of cyclic allylic alcohols 3407
Dore T. M. see Wender P. A. 7687
Dorgan R. J. J. see Andrews I. P. 4811
Doris E. see Barton D. H. R. 3295
Dorling E. K. see Luke R. W. A. 263
Dorofeeva T. see Polyak F. 8223
Dörre K. see Coudret J. L. 2425
Dorta R. L. Martín A. Salazar J. A. Suárez E. and Prangé T. Synthesis of dispiroacetals from carbohydrates by intramolecular hydrogen abstractions 6021
Dossetter A. G. see Clark J. S. 5605
Dostál J. see Marek R. 1655
Łotowski Z. see Morzycki J. W. 2079
Dougherty T. J. see Kozyrev A. N. 747
Dougherty T. J. see Kozyrev A. N. 3781
Dougherty T. J. see Kozyrev A. N. 6431
Douglas K. T. see Dekhane M. 1883
Douglas S. P. see Wang Z.-G. 6985
Dourtoglou V. see Mavratzotis M. 5699
Dow R. L. see Wright S. W. 6965
Dowd P. see Zhang W. 957
Doyle M. P. Zhou Q.-L. Charnsangavej C. Longoria M. A. McKervey M. A. and García C. F. Chiral catalysts for enantioselective intermolecular cyclopropanation reactions with methyl phenyldiazoacetate. Origin of the solvent effect in reactions catalyzed by homochiral dirhodium(II) prolinates 4129
Doyle M. P. and Kalinin A. V. Synthesis of pyrrolizidine bases by highly diastereoselective and regioselective catalytic carbon–hydrogen insertion reactions of chiral pyrrolidinediazoacetamides 1371
Doyle M. P. see Buck R. T. 7631
Doyle T. W. see Mastalerz H. 8683
Doyle T. W. see Mastalerz H. 8687
Doyon J. see Paquette L. A. 3299
Drach J. C. see Gudmundsson K. S. 2365
Drach J. C. see Gudmundsson K. S. 6275
Dragoli D. R. see Herrick R. S. 5289
Draillard K. see Mishra A. K. 7515
Dressman B. A. Spangle L. A. and Kaldor S. W. Solid phase synthesis of hydantoins using a carbamate linker and a novel cyclization/cleavage step 937
Dressman B. A. see Kaldor S. W. 7193
Dronsfield A. see Brown T. 5413
Droste J. J. see Audia J. E. 4121
Drysdale M. J. see Buck R. T. 7631
D'Souza V. T. see Tian S. 8309
Du S. Plat D. and Baasov T. A new model for the stereoselective construction of the Kdo structure through a mechanism similar to that suggested for the enzyme Kdo8P synthase 3545
DuBay W. J. see Grieco P. A. 8707
DuBay W. J. see Henry, Jr K. J. 8289
Dubois E. P. Neszmélyi A. Lotter H. and Pozsgay V. A serendipitous synthesis of cyclokojibiose 3627
Dubois J. see Marder R. 1777
Dubovitskii S. V. Method for synthesis of 12*H*-pyrido[1,2-*a*:3,4-*b*']diindoles. Total synthesis of homofascaplysin C 5207
Dubowchik G. M. and Firestone R. A. A lipophilic polyaminobolaamphiphile designed to dissipate pH gradients across a bilayer membrane: synthesis and proton transport 6465
Ducep J.-B. see Bildstein S. 4941

Ducep J.-B. see Bildstein S. 8759
Duchêne A. see Thibonnet J. 7507
Ducroix B. see Dare S. 4341
Ducrot P.-H. Einhorn J. Kerhoas L. Lallemand J.-Y. Milat M.-L. Blein J.-P. Neuman A. and Prangé T. *Cercospora beticola* toxins—XI. Isolation and structure of beticolin 0 3121
Duff M. E. see Byers J. H. 2743
Duffy J. L. see Evans D. A. 1957
Dufour C. Iwasa S. Fabré A. and Rawal V. H. Unexpected fragmentations leading to quinanes and hydrindanes mediated by a silyl radical 7867
Duggan P. J. see Riggs J. A. 6303
Duhamel L. see Godebout V. 7255
Duhamel L. see Hiouni A. 5507
Duhamel L. see Martin C. 8169
Dujardin G. Rossignol S. and Brown E. Chiral enol ethers in carbohydrate chemistry: *de novo* synthesis of protected L-2-deoxy hexoses 4007
Dujardin G. see Hayes P. 3687
Dukesherer D. R. see Hamper B. C. 3671
Dukesherer D. R. see South M. S. 1351
Dullweber U. see Meier H. 1191
Dunigan J. M. see Audia J. E. 4121
Dunn V. see Kocovsky P. 5585
Dupau P. Renouard T. and Le Bozec H. Straightforward synthesis of 4-formyl- and 4,4'-diformyl-2,2'-bipyridines: access to new dialkenyl substituted bipyridyl ligands 7503
Dupont J. see Monteiro A. L. 1157
Dupraz A. Guy P. and Dupuy C. Polyalkylation of primary polyols by 1,4-addition to *tert*-butyl acrylate and acrylonitrile 1237
Dupuis C. see Lemaire-Audoire S. 2003
Dupuy C. see Dupraz A. 1237
Duque-Soladana J. P. see Andrés C. 9085
Duréault A. see Campanini L. 5095
Duréault A. see McCort I. 7717
Duret P. Waechter A.-I. Figadère B. Hocquemiller R. Cavé A. Piérard C. and Pérès M. Assignment of absolute configuration of the α,β-unsaturated γ-methyl-γ-lactone of the annonaceous acetogenins by a simple enzymatic method 7043
Durst T. see Chauret D. C. 7875
Dussault P. H. and Davies D. R. Synthesis of 1,2-dioxanes, 1,2,4-trioxanes, and 1,2,4-trioxepanes via cyclizations of unsaturated hydroperoxy-acetals 463
Dutta S. C. see Bordoloi M. 6791
Dutton C. J. see Less S. L. 3511
Dutton C. J. see Less S. L. 3515
Dutton C. J. see Less S. L. 3519
Dutton P. L. see Rabanal F. 1347
Dvorák D. see Dvoráková H. 1285
Dvoráková H. Dvorák D. and Holy A. Coupling of 6-chloropurines with organocuprates derived from Grignard reagents: a convenient route to *sec* and *tert* 6-alkylpurines 1285
Dyer J. Keeling S. and Moloney M. G. Functionalised pyrrolidinones by conjugate addition of stabilised enolates and Reformatsky reagents 4573
Dyer U. see Adger B. 6399
Dyker G. and Grundt P. Annulated ring-systems by domino-Heck–aldol-condensation and domino-Heck–Michael-addition processes 619

Eames J. de las Heras M. A. Jones R. V. H. and Warren S. Stereochemically controlled synthesis of 1,8-dioxaspiro-[4.5]decanes and 1-oxa-8-thiaspiro[4.5]decanes by phenylsulfanyl migration 4581
Eames J. de las Heras M. A. Jones R. V. H. and Warren S. Scope and limitation of the [1,4]SPh shift in the synthesis of allylic alcohols 1117
Eames J. de las Heras M. A. and Warren S. Secondary and tertiary alcohols as nucleophiles in the stereospecific synthesis of substituted tetrahydrofurans by cyclisation of 1,3-diols with phenylsulfanyl migration 4077
Eames J. Jones R. V. H. and Warren S. Synthesis of cyclic sulfides using phenylthio migration 707
Eames J. Jones R. V. H. and Warren S. Efficient alkylsulfanyl (SMe, SEt and SCH_2Ph) and sulfanyl (SH) migration in the stereospecific synthesis of substituted tetrahydrofurans 4823
Eames J. and Warren S. Kinetic and thermodynamic control in the stereospecific synthesis of cyclic ethers via phenylsulfanyl (PhS) migration 3525
Eastwood F. W. see Brown R. F. C. 6819
Easwaran K. R. K. see Ghosh S. 5769
Ebert C. Gardossi L. and Linda P. Control of enzyme hydration in penicillin amidase catalysed synthesis of amide bond 9377
Echavarren A. M. see Castaño A. M. 6587
Echavarren A. M. see Castaño A. M. 6591
Echavarren A. M. see de Frutos O. 8953
Eckers C. see New A. P. 3039
Eckrich R. see Marchand A. P. 467
Ede N. J. Ang K. H. James I. W. and Bray A. M. Incorporation of 2-hydroxy-4-methoxybenzyl protection during peptide synthesis via reductive alkylation on the solid phase 9097
Edstrom E. D. Feng X. and Tumkevicius S. Development of methylthiomethyl (MTM) protection for N^1 of pyrrolo[2,3-*d*]pyrimidin-2,4-diones 759
Efimov V. A. see van der Laan A. C. 7857
Eggleston D. S. see Witty D. R. 3067
Egorov A. M. see Seelbach K. 1377
Eguchi S. see Ohno M. 9211
Eguchi S. see Okawa T. 81
Eguchi T. see Kishida M. 2061
Eh M. see Kalesse M. 1767
Ehrlich P. P. and Campbell J. R. Use of the thiomethyl group for activation in the synthesis of 8-hydroxy-1-(spiro-1'-indan)benzazepines 7345
Eifert J. H. see Audia J. E. 4121
Eigendorf G. K. see Nair V. 8271
Einhorn J. see Ducrot P.-H. 3121
Eiras A. see Unelius C. R. 1505
Eisele T. Toepfer A. Kretzschmar G. and Schmidt R. R. Synthesis of a thio-linked

analogue of sialyl Lewis X 1389
Eisenberg S. W. E. Chen C. Wu J. Lebrilla C. and Kurth M. J. Cyclic oligolides via acylketene mediated lactonization: synthesis and characterization 7683
Eisner T. see Glisan King A. 2141
El-Ahl A.-A. S. see Elmorsy S. S. 2297
Elandaloussi E. H. Frère P. and Roncali J. Soluble thienylenevinylene oligomers end-capped with 1,3-dithiole-2-ylidene groups 6121
El-Faer M. Z. see Rawdah T. N. 4267
El Ghammarti S. see Rigo B. 485
Elinson M. N. see Barba F. 5759
El Kaim L. Guyoton S. and Meyer C. New access to fluorinated glycolic acid derivatives from trifluoropyruvamides 375
El-Khoury M. Wang Q. and Schlosser M. A new generation of 'instant ylids': powder mixtures of phosphonium salts and potassium hydride as storable precursors to Wittig reagents 9047
Ellena J. F. see McGarvey G. J. 5465
Elliot J. M. see Butcher J. W. 6685
Elliott A. J. Kotian P. L. Montgomery J. A. and Walsh D. A. Synthesis of pyrrolo[3,2-*d*]pyrimidines (9-deazaguanines) by reductive cyclodeamination reactions 5829
Elliott A. J. Montgomery J. A. and Walsh D. A. A short, facile synthesis of 2-amino-1,5-dihydro-4*H*-pyrrolo-[3,2-*d*]pyrimidin-4-one (9-deazaguanine) 4339
Ellman J. A. see Virgilio A. A. 6961
El Meslouti A. see Glaçon V. 3683
Elmorsy S. S. El-Ahl A.-A. S. Soliman H. and Amer F. A. Use of reductive properties of iodotrichlorosilane—II. Chemoselective reduction of α,β-unsaturated ketones and nitriles 2297
Elofsson M. Roy S. Salvador L. A. and Kihlberg J. Building blocks for glycopeptide synthesis: preparation of α-*O*-fucosylated Fmoc serine and threonine in one step from L-fucose tetraacetate 7645
Elson S. see New A. P. 3039
Elworthy T. R. see Smith D. B. 21
Emori E. see Sasai H. 5561
Endoh F. see Takahashi Y. 1841
Endová M. Masojídková M. Budešínsky M. and Rosenberg I. Synthesis of 1-phosphonoalkylidene and -arylidene derivatives of nucleosides 3497
Engel P. S. see Jursic B. S. 6473
Engelen V. see van Maarseveen J. H. 8249
Englebretsen D. R. and Alewood P. F. Boc SPPS of two hydrophobic peptides using a 'solubilising tail' strategy: dodecaalanine and chemotactic protein 10^{42-55} 8431
Engler T. A. Agrios K. Reddy J. P. and Iyengar R. Contrasting reactivity in Lewis acid-promoted reactions of thio- and silyl-allenes with 1,4-benzoquinones 327
Engler T. A. and Chai W. Synthesis of (±)-licarin B and eupomatenoids-1 and -12: a general approach to 2-aryl-7-alkoxy-benzofuranoid neolignans 6969
Enholm E. J. and Jia Z. J. Fragmentation–cyclization reactions of O-stannyl ketyls: the synthesis of an angular triquinane skeleton 1177
Enholm E. J. and Whitley P. E. Tin(IV) enolates from allylic *O*-stannyl ketyls: reactions with alkyl halides and HMPA 559
Enjalbal C. see Cavelier F. 5131
Enomoto S. see Takahashi C. 655
Ensley H. E. Mahadevan S. and Mague J. Multiply bridged acetylenic thiacyclophanes 6255
Ercolani G. and Scripilliti A. Proximity effect induced by hydrogen-bonding association. A detailed kinetic study 101
Ermolenko M. S. Determination of the absolute stereochemistry of the antifungal antibiotic YM-47522 by the total synthesis of its enantiomer 6711
Ernet T. and Haufe G. Diels–Alder reactions of vinyl fluorides with 1,3-diphenylisobenzofuran 7251
Erneux C. see Fauq A. H. 1917
Ernst A. Gobbi L. and Vasella A. Orthogonally protected dialkynes 7959
Escudero J. see Barba F. 5759
Escudier J.-M. Tworkowski I. Bouziani L. and Gorrichon L. Synthèse stéréosélective de thymidine substituée en C-5' 4689
Espinosa J.-F. Dietrich H. Martín-Lomas M. Schmidt R. R. and Jiménez-Barbero J. Conformational flexibility of *C*-glycosides: experimental evidence of the existence of a *gauche–gauche* conformation around the glycosidic linkage for a lactose analogue 1467
Espinosa J. F. see Lorente A. 4417
Estieu K. Ollivier J. and Salaün J. A new cyclobutane ring contraction: the base-induced rearrangement of an α-bromocyclobutanecarboxylic ester 623
Etemad-Moghadam G. see Mirza-Aghayan M. 3109
Ethiraj K. S. see Chavan S. P. 7827
Eto M. Nishimoto M. Kubota S. Matsuoka T. and Harano K. Retro-ene type fragmentation of allylic dithiolcarbonates 2445
Evans A. C. see Mallory F. B. 7173
Evans D. A. Kozlowski M. C. and Tedrow J. S. Cationic bis(oxazoline) and pyridyl-bis(oxazoline)Cu(II) and Zn(II) Lewis acid catalysts. A comparative study in catalysis of Diels–Alder and aldol reactions 7481
Evans D. A. Yang M. G. Dart M. J. and Duffy J. L. Double stereodifferentiating aldol reactions of (*E*) and (*Z*) lithium enolates. Model reactions for polypropionate assemblage 1957
Evans D. A. and Watson P. S. Synthesis of the orienticin C M(2–4) macrocycle utilizing a nucleophilic aromatic substitution strategy 3251
Evans D. A. C. see Butler D. N. 2157
Evans G. R. see Brown C. 9101
Evans G. R. see Brown C. 679
Evans P. A. and Brandt T. A. Palladium catalyzed cross-coupling acylation approach to the antitumor antibiotic Fredericamycin A 1367
Evans P. A. and Brandt T. A. Novel haloacetoxylation of 1,4-dimethoxynaphthalenes

using hypervalent iodine chemistry 6443
Evans P. A. and Brandt T. A. Enantioselective allylic substitution using a novel (phosphino-1,3-oxazine)-palladium catalyst 9143
Evans P. A. and Garber L. T. Diastereoselective formation of cyclic acetals via an intramolecular fluoride-catalyzed hetero-Michael reaction 2927
Evershed R. P. see Mottram H. R. 8593
Evin Ö. Ö. see Demir A. S. 407
Evina C. M. and Guillerm G. Synthesis of uracil polyoxin C from uridine 163
Ewing M. see Lane S. J. 1
Ezquerra J. Lamas C. Pastor A. Alvarez P. Vaquero J. J. and Prowse W. G. Use of azalactones in a 'Pictet–Spengler-like' reaction. Stereoselective synthesis of 1,3,4-substituted tetrahydro-β-carbolines 5813
Ezquerra J. Pedregal C. Lamas C. Pastor A. Alvarez P. and Vaquero J. J. Conformationally constrained serotonin analogues: stereoselective synthesis of *trans*-3-(2-aminocyclo-alkyl)indoles by aziridine ring opening 683
Ezquerra J. see Vega J. A. 6413

Faber K. see Kroutil W. 8379
Fabré A. see Dufour C. 7867
Fairchild C. see Kant J. 6495
Faita G. see Desimoni G. 3027
Faivre-Chauvet A. see Mishra A. K. 7515
Fajgar R. Vítek J. Haas Y. and Pola J. Observation of secondary 2-butene ozonide in the ozonation of *trans*-2-butene in the gas phase 3391
Falck J. R. see Bhatt R. K. 3811
Falck J. R. see Heckmann B. 1421
Falck J. R. see Heckmann B. 1425
Falck J. R. see Lai J.-Y. 7167
Fall M. J. see Davies H. M. L. 4133
Faller J. W. and Liu X. Efficient chiral poisoning of racemic titanium catalysts for the asymmetric chloral-ene reaction 3449
Fallis A. G. see Wong T. 755
Falvey D. E. see Srivastava S. 2895
Fan J. see Yue X. 8213
Fan J.-Q. see Wang L.-X. 1975
Fan R. see Howell A. R. 8651
Fan W. see Swindell C. S. 3919
Fan W. see Swindell C. S. 2321
Fan Y.-H. and Haseltine J. Interactive n→σ* delocalizations that control an aqueous organic equilibrium 9279
Fanet C. see Gaudemer A. 2237
Fanni S. Arnaud-Neu F. McKervey M. A. Schwing-Weill M.-J. and Ziat K. Dramatic effects of *p*-dealkylation on the binding abilities of *p-tert*-butylcalix-[6]arenes: new Cs^+ and Sr^{2+} selective receptors 7975
Farèse A. Patino N. Condom R. Dalleu S. and Guedj R. Liquid phase synthesis of a peptidic nucleic acid dimer 1413
Farina V. and Hossain M. A. On the mechanism of cine substitution in the Stille reaction: new evidence for the intermediacy of Pd(0) carbenes 6997
Farina V. see Kant J. 6495
Farina V. see Ward Y. D. 6993
Farooqui F. see Reddy M. P. 8691
Farooqui F. see Zhang G. 6243
Farràs J. del Mar Lleó M. Vilarrasa J. Castillón S. Matheu M. Solans X. and Font-Bardia M. New bicyclic nucleosides related to 6-azaisocytidine 901
Farthing C. N. Baldwin J. E. Russell A. T. Schofield C. J. and Spivey A. C. Syntheses of (*S*)-β-pyrazolylalanine and (*S*)-quisqualic acid from a serine-derived aziridine 5225
Farthing C. N. see Baldwin J. E. 3761
Fastrez J. see Vanwetswinkel S. 2761
Fattorusso E. see Cafieri F. 3587
Faulkner D. J. see Salomon C. E. 9147
Faulkner D. J. see Schmidt E. W. 3951
Faulkner D. J. see Schmidt E. W. 6681
Fauq A. H. Zaidi J. H. Wilcox R. A. Varvel G. Nahorski S. R. Kozikowski A. P. and Erneux C. Synthesis of novel metabolically stable analogues of D-*myo*-inositol 1,4,5-trisphosphate 1917
Faustino M. A. F. Neves M. G. P. M. S. Vicente M. G. H. Silva A. M. S. and Cavaleiro J. A. S. Diels–Alder reactions of Ni(II) β-vinyl-*meso*-tetraaryl-porphyrins 3569
Favero L. see Crotti P. 1675
Fearnley S. P. see Butora G. 8155
Feasson C. see Jubault P. 3679
Feaster J. see Robinson A. 8321
Feβner K. see Paterson I. 8803
Feducovich S. K. see Barba F. 5759
Fehrentz J.-A. see Gouilleux L. 7031
Fehrentz J.-A. see Paris M. 8489
Fehrentz J.-A. see Pothion C. 1027
Feldberg L. and Sasson Y. Copper catalyzed oxidation of tetralin to 1-(*tert*-butylperoxy)-tetralin by aqueous *tert*-butylhydroperoxide under phase transfer conditions 2063
Felder E. R. see Marzinzik A. L. 1003
Felix D. see Szymoniak J. 33
Fell R. T. see Adam W. 6531
Feng D. D. see Liang G.-B. 8961
Feng D. D. see Liang G.-B. 6627
Feng X. see Edstrom E. D. 759
Fenical W. see Kang H. 2369
Fenical W. see Köck M. 363
Fenical W. see Lindel T. 1327
Fenoglio I. Nano G. M. Vander Velde D. G. and Appendino G. Synthesis of azetidine-type taxanes 3203
Férézou J.-P. see Muller B. 3313
Ferguson G. see Arnecke R. 1497
Ferguson G. see Murphy W. S. 7615
Ferguson G. see Pappalardo S. 3907
Feringa B. L. see Keller E. 1879
Fernández J. J. see Norte M. 2671
Fernández L. see Alvaro M. 2873
Fernández M^a C. see Ojea V. 5801
Fernández R. see Lassaletta J. M. 5787
Fernández de la Pradilla R. Manzano P. Priego J. Viso A. Martínez-Ripoll M. and Rodríguez A. Stereoselective nucleophilic epoxidation of hydroxy vinyl sulfoxide derivatives 6793
Fernández de la Pradilla R. see Marino J. P. 8031
Fernández-Saiz M. see Lorente A. 4417

Ferrara A. and Burton G. Ring expansion of fused cyclo-propylketones. Synthesis of a 12(13→18)-*abeo*-pregnane 929
Ferreira A. B. B. see Warrener R. N. 2161
Ferreira D. see Marais C. 5763
Ferreira F. see Greck C. 2031
Ferrer M. Gibert M. Sánchez-Baeza F. and Messeguer A. Easy availability of more concentrated and versatile dimethyldioxirane solutions 3585
Ferreri C. see Chatgilialoglu C. 6387
Ferri F. and Alami M. Expeditious stereo and regioselective synthesis of stannylated dienynes: versatile precursors of dienediynes related to neocarzinostatin chromophore 7971
Ferri F. see Alami M. 57
Ferri F. see Alami M. 2763
Ferris L. Haigh D. and Moody C. J. New chiral rhodium(II) carboxylates and their use as catalysts in carbenoid transformations 107
Ferris L. see Buck R. T. 7631
Ferroud D. see Girard A. 7967
Ferruti P. see Bonora G. M. 4761
Fex T. see Svensson A. 7649
Fiandanese V. Marchese G. Punzi A. and Ruggieri G. A straightforward synthesis of substituted cyclopentenones 8455
Field R. A. see Kartha K. P. R. 5175
Field R. A. see Kartha K. P. R. 8807
Fields S. C. Dent, III W. H. Green, III F. R. and Tromiczak E. G. Bis-esters from maleic anhydrides under neutral conditions: protection of the anhydride of the natural product cornexistin 1967
Figadère B. see Duret P. 7043
Figadère B. see Franck X. 1593
Figadère B. see Gleye C. 9301
Figadère B. see Pichon M. 7963
Figueras F. see Cseri T. 1473
Figueras F. see Fraile J. M. 5995
Filler R. see Chen W. 8975
Finch H. see Harwood L. M. 4217
Fink D. M. and Kurys B. E. Preparation of 3-(4-pyridinylamino)-1,2-benzisoxazoles via a nucleophilic aromatic substitution reaction 995
Finlay M. R. V. see Paterson I. 8803
Finner E. see van Maarseveen J. H. 8249
Finney F. J. L. see Bell D. 3895
Fioravanti S. see Carducci M. 3777
Fiorin G. L. see Silveira C. C. 6085
Fiorin G. L. see Silveira C. C. 9173
Firestone R. A. see Dubowchik G. M. 6465
Fischer J. see Hajek F. 1401
Fischer J. see Hosseini M. W. 1405
Fisher S. see Brough P. A. 2915
Fishpaugh J. R. see Adamczyk M. 4305
Fishpaugh J. R. see Adamczyk M. 7171
Fishwick C. W. G. Foster R. J. and Carr R. E. Hetero-1,3-dipolar cyclo-additions of dithiolane-isocyanate imminium methylides: a novel route to 1,3-oxazolidine- and thiazolidine-2-thiones 711
Fishwick C. W. G. Foster R. J. and Carr R. E. A short dipolar cycloaddition approach to γ-lactam alkaloids from *Cynometra hankei* 3915
Fishwick C. W. G. Foster R. J. and Carr R. E. Cyclic-fused azomethine-, imidate-, and thioimidate methylides: an efficient regiocontrolled entry into spiro-fused pyrrolidines 5163
Fishwick C. W. G. see Bell A. S. 123
Fissyuk A. S. Vorontsova M. A. and Temnikov D. V. A new route to 5,6-dihydro-pyridine-2(1*H*)-thiones 5203
FitzGerald G. A. see Adiyaman M. 4849
Fiumana A. see Jones K. 8049
Flaherty M. B. see Herrick R. S. 5289
Flaherty T. M. and Gervay J. Hydride addition to 1,2-anhydrosugars: a highly stereoselective route to anhydroalditols 961
Flatau S. see Freyer W. 5083
Flavin M. T. see Chen W. 8975
Fleet G. W. J. see Bell A. A. 8561
Fleet G. W. J. see Blériot Y. 7155
Fleet G. W. J. see Davis B. 8565
Fleet G. W. J. see Griffiths R. C. 3207
Fleet G. W. J. see Shilvock J. P. 8569
Fleming I. Roberts R. S. and Smith S. C. The phenyldimethylsilyllithium reagent 9395
Fleming I. and Lee D. Conjugate addition of silyl groups to β-unsubstituted enones, and Si-to-OH conversion: a synthesis of (±)-lavandulol 6929
Fleury M.-B. see Largeron M. 7499
Flippin L. A. see Zhao S.-H. 4463
Flisak J. R. Lantos I. Liu L. Matsuoka R. T. Mendelson W. L. Tucker L. M. Villani A. J. and Zhang W.-Y. Enantioselective synthesis of a 5-LO inhibiting hydroxyurea. Construction of the dihydro-benzofuran nucleus by tandem nucleophilic addition and intramolecular cyclization 4639
Flock S. see Hofsløkken N. 119
Florentiev V. L. see Timofeev E. N. 8467
Flores B. see Méndez J. M. 4099
Flores V. Nguyen C. K. Sindelar C. A. Vasquez L. D. and Shachter A. M. Synthesis and circular dichroism of tartrate-linked porphyrin dimers 8633
Florio S. Capriati V. and Luisi R. An oxazoline-mediated synthesis of formyl epoxides 4781
Florio S. and Troisi L. Lithiation of allyl chlorides and reactions with electrophiles 4777
Floyd C. D. Lewis C. N. Patel S. R. and Whittaker M. A method for the synthesis of hydroxamic acids on solid phase 8045
Flynn G. A. see Waid P. P. 4091
Fokin A. V. see Osipov S. N. 615
Fong K. C. see Dai W.-M. 8413
Font-Bardia M. see Camps P. 8601
Fontana F. see Araneo S. 6897
Fontana F. see Araneo S. 7425
Fontana G. see Speranza G. 4247
Font-Bardia M. see Farràs J. 901
Fonte P. Kohnke F. H. Parisi M. F. Menzer S. and Williams D. J. Chiral naphthafurophanes from furan macrocycles 6205
Fonte P. Kohnke F. H. Parisi M. F. and Williams D. J. Conversion of the cyclic

hexamer of furan and acetone into naphthafurophanes 6201
Font-Sanchis E. see Pérez-Prieto J. 4923
Foote C. S. see Stratakis M. 4105
Foote C. S. see Stratakis M. 7159
Foote K. M. Hayes C. J. and Pattenden G. Synthetic studies towards phomactin A. Concise synthesis of the novel tricyclic furanochroman system 275
Forbes D. C. see Buck R. T. 7631
Ford M. J. see Craig D. 535
Forgo P. see Tian S. 8309
Fornasier R. see Carofiglio T. 8019
Forsyth C. J. see Lee C. S. 6449
Forti L. Ghelfi F. and Pagnoni U. M. Fe^0 Initiated halogen atom transfer radical addition of methyl 2-Br-2-Cl-carboxylates to olefins 2077
Fortunak J. M. D. Mastrocola A. R. Mellinger M. Sisti N. J. Wood J. L. and Zhuang Z.-P. Novel syntheses of camptothecin alkaloids—I. Intramolecular [4 + 2] cycloadditions of *N*-arylimidates and 4*H*-3,1-benzoxazin-4-ones as 2-aza-1,3-dienes 5679
Fortunak J. M. D. Kitteringham J. Mastrocola A. R. Mellinger M. Sisti N. J. Wood J. L. and Zhuang Z.-P. Novel syntheses of camptothecin alkaloids—II. Concise synthesis of (*S*)-camptothecins 5683
Foster R. J. see Fishwick C. W. G. 711
Foster R. J. see Fishwick C. W. G. 3915
Foster R. J. see Fishwick C. W. G. 5163
Fotiadu F. see Chiodi O. 39
Fouquet E. see Corlay H. 5983
Fournier R. see Mutti S. 3125
Fox M. A. see Hong B. 583
Fraile J. M. García J. I. Mayoral J. A. and Figueras F. Comparison of several heterogeneous catalysts in the epoxidation of α-isophorone with hydroperoxides 5995
Francisco C. G. González C. C. and Suárez E. Fragmentation of carbohydrate anomeric alkoxy radicals. A new synthesis of alduronic acid lactones 1687
Franck X. Figadère B. and Cavé A. Synthesis of (+)-squamostanal-A: a bioactive acetogenin of Annonaceae 1593
Franck-Neumann M. Miesch-Gross L. and Nass O. Intramolecular Friedel–Crafts acylations of 1- and 2-alkanoic acid diene tricarbonyliron complexes 8763
Franco S. see Czernecki S. 4003
Fraser-Reid B. see Rodebaugh R. 5477
Fredenburgh L. E. see Senanayake C. H. 3271
Freeman-Cook K. D. and Halcomb R. L. Synthesis of bicyclic ketals related to zaragozic acid by a novel photo-annulation 4883
Frère P. see Elandaloussi E. H. 6121
Frère P. see Leriche P. 8861
Frérot E. Marquis C. and Vogel P. Total asymmetric synthesis of long-chain, branched carbohydrates and of an aza-*C*-disaccharide 2023
Fresneda P. M. see Molina P. 9353
Fretté X. C. Biard J. F. Roussakis C. Verbist J. F. Vercauteren J. Pinaud N. and Débitus C. New biologically active pectinoacetal-related sterols from the gorgonian *Ctenocella* sp. 2959
Fretz H. Synthesis of novel L-phenylalanine derivatives substituted with a keto ylide as stable precursor of a vicinal tricarbonyl moiety 8475
Fretz H. Solid phase synthesis of peptides containing novel L-phenylalanine derivatives substituted with vicinal tricarbonyl moieties 8479
Frey D. A. Wu N. Moeller K. D. Anodic electrochemistry and the use of a 6-volt lantern battery: a simple method for attempting electrochemically based synthetic transformations 8317
Freyer A. J. see Snider B. B. 6977
Freyer W. and Flatau S. The first annulated porphyrazine containing four endoperoxide bridges 5083
Fridkovsky E. Rudi A. Benayahu Y. Kashman Y. and Schleyer M. Sarcoglane, a new cytotoxic diterpene from *Sarcophyton glaucum* 6909
Fritz J. E. see Kaldor S. W. 7193
Froehler B. C. see Gutierrez A. J. 3959
Fröhlich R. see Hintz S. 7349
Fröhner W. see Knölker H.-J. 9183
Fronczek F. R. see Dávila A. 2517
Fronczek F. R. see Junk T. 4361
Frost C. Linnane P. Magnus P. and Spyvee M. Concise synthesis of taxol A-ring components: remote diastereoselective additions of alkenyl lithiums to aldehydes 9139
Fry A. J. see Kaufman S. A. 8105
Fry D. F. Brown M. McDonald J. C. and Dieter R. K. Synthesis of functionalized cyclic imines by addition of Grignard reagents to ω-bromonitriles and γ,δ-unsaturated nitriles 6227
Frydman B. see Kogan M. 763
Fryer A. M. see Baldwin J. E. 6923
Fu J. see Benson D. R. 4833
Fu T. Y. Scheffer J. R. and Trotter J. Crystal structure–reactivity relationships in the solid state photochemistry of 2,4,6-triisopropylthiobenzophenone: C=O...H versus C=S...H abstraction geometry 2125
Fuchigami T. see Fujita T. 4725
Fuchikami T. see Hagiwara T. 8187
Fuchikami T. see Hirosawa C. 6749
Fuchikami T. see Shimizu R. 5557
Fuchikami T. see Shimizu R. 8405
Fuchs P. L. see Jin Z. 5247
Fuchs P. L. see Jin Z. 5249
Fuchs P. L. see Jin Z. 5253
Fuchs P. L. see Kim S. H. 2545
Fuchs P. L. see Xiang J. S. 5269
Fugami K. see Harayama H. 7287
Fuji K. Takasu K. Miyamoto H. Tanaka K. and Taga T. Polyaza macrocycles containing the piperazine ring as a semi-flexible moiety 7111
Fuji K. Yang X.-S. Tanaka K. Asakawa N. and Hao X.-J. 1,1'-Binaphthalene-8,8'-diol as an efficient chiral controller: highly enantioselective

synthesis of optically active ketones 7373
Fuji K. see Kawabata T. 4153
Fuji K. see Tanaka K. 3735
Fujii K. Hara O. Fujita Y. and Sakagami Y. A highly stereoselective synthesis of *Z*-disubstituted olefin by *O*-assisted Still–Wittig rearrangement 389
Fujii K. see Harada K. 3001
Fujii N. see Ibuka T. 2849
Fujii S. see Nishizono N. 7569
Fujii T. see Suzuki K. 5921
Fujimaki K. see Nakamura H. 3153
Fujimoto H. see Choshi T. 2593
Fujimoto K. see Sugiyama H. 1805
Fujimoto T. see Tanaka Y. 881
Fujioka H. Kitagawa H. Matsunaga N. Nagatomi Y. and Kita Y. Remote asymmetric induction for chiral 1,4-diols using a chiral acetal derived from chiral hydrobenzoin 2245
Fujioka H. see Kita Y. 1817
Fujioka S. see Kimura Y. 4961
Fujisaki S. see Saitoh M. 6733
Fujisawa T. Kooriyama Y. and Shimizu M. Switchover of diastereofacial selectivity in the condensation reaction of optically active *N*-sulfinimine with ester enolate 3881
Fujisawa T. see Hayakawa R. 7533
Fujita K. Mizuochi M. Kiyooka A. Koga K. and Ohta K. Regiospecific one-point cleavage of capped β-cyclodextrin by taka-amylase A 4035
Fujita K. Okabe Y. Ohta K. Yamamura H. Tahara T. Nogami Y. and Koga T. Dependence of guest-binding ability on cavity shape of deformed cyclodextrins 1825
Fujita K. see Chen W.-H. 7561
Fujita K. see Murashima T. 8391
Fujita T. and Fuchigami T. Electrolytic partial fluorination of organic compounds—XX. Electrosynthesis of novel hypervalent iodobenzene chlorofluoride derivatives and its application to indirect anodic *gem*-difluorination 4725
Fujita T. see Shibata K. 2791
Fujita T. see Yanada R. 9313
Fujita Y. see Fujii K. 389
Fujiwara K. see Hayashi N. 6173
Fujiwara M. see Ichikawa J. 8799
Fujiwara Y. see Irie O. 9229
Fujiwara Y. see Kitamura T. 3721
Fujiwara Y. see Okuma K. 8883
Fujiwara Y. see Taniguchi Y. 3465
Fukase K. Yasukochi T. Nakai Y. and Kusumoto S. *p*-Nitrophenyl group for anomeric protection of oligosaccharides, selective oxidative cleavage via *p*-acetamidophenyl glycosides 3343
Fukase K. Yasukochi T. Suda Y. Yoshida M. and Kusumoto S. Chemoenzymatic synthesis of Gal(β1-3)Gal(β1-4)Xyl(β)-L-Ser and Gal(β1-3)Gal(β1-4)Xyl(β)-MU by the use of β-D-Galactosidase 6763
Fukase K. see Suda Y. 1053
Fukazawa Y. Okajima T. and Kodama M. Transition structures for MeOH addition to pentadienyl cations and stereochemistry of intramolecular ether cyclization 1257
Fukazawa Y. see Yoshimura K. 1435
Fukuda S. see Iida K. 4997
Fukuda T. and Katsuki T. Mn–Salen catalyzed asymmetric oxidation of enol derivatives 4389
Fukuda T. see Noguchi Y. 4533
Fukuhara C. see Ikeda A. 7091
Fukuhara T. see Hara S. 8511
Fukui K. Iwane K. Shimidzu T. and Tanaka K. Oligonucleotides covalently linked to an acridine at artificial abasic site: influence of linker length and the base-sequence 4983
Fukumoto K. see Nemoto H. 6355
Fukumoto K. see Tokunaga Y. 6157
Fukumoto K. see Toyota M. 4401
Fukunishi K. see Miki S. 2049
Fukushi Y. Shigematsu K. Mizutani J. and Tahara S. A new NMR chiral derivatizing reagent for determining the absolute configurations of carboxylic acids 4737
Fukuyama H. see Hatakeyama S. 4047
Fukuyama H. see Hatakeyama S. 4287
Fukuyama Y. Kiriyama Y. and Kodama M. Total synthesis of herbertenediol, an isocuparane sesquiterpene isolated from liverworts 1261
Fukuyama Y. Minami H. Takeuchi K. Kodama M. and Kawazu K. Neovibsanines A and B, unprecedented diterpenes from *Vibumum awabuki* 6767
Fukuzawa S. Matsunaga S. and Fusetani N. Use of ^{15}N-HMBC NMR techniques to determine the orientation of the steroidal units in ritterazine A 1447
Funabiki K. see Katsuyama I. 4177
Funatsu M. see Miura K. 9059
Furihata K. and Seto H. 3D-HMBC, a new NMR technique useful for structural studies of complicated molecules 8901
Furihata K. see Seto H. 7979
Furlán R. L. E. Mata E. G. and Mascaretti O. A. Cleavage of carboxylic esters effected by organotin oxides and hydroxides under classical heating and microwave irradiation. A comparative study 5229
Fürstner A. and Brunner H. Preparation of allyl-, alkenyl- and of functionalized arylmanganese reagents by oxidative insertion of manganese-graphite into organic halides 7009
Fürstner A. and Kindler N. Macrocycle formation by ring-closing-metathesis—II. An efficient synthesis of enantiomerically pure (*R*)-(+)-lasiodiplodin 7005
Furstoss R. see Alphand V. 6117
Furstoss R. see Lebreton J. 1011
Furstoss R. see Pedragosa-Moreau S. 3319
Furstoss R. see Viazzo P. 4519
Furukawa H. see Mori Y. 2605
Furukawa H. see Mori Y. 6959
Furukawa I. see Hori K. 5947
Furukawa N. see Shima H. 667
Furukawa S. see Kawagishi H. 7399
Furumoto Y. see Toshima H. 5707
Furuta S. and Hiyama T. Difluorination of 2-substituted 1,1,1-tris(methylthio)ethanes by oxidative desulfurization–fluorination. A new route to partially fluorinated olefins 7983
Furuya T. see Katagiri N. 1801
Furuya T. see Sato M. 633
Fusar-Bassini D. see Pinciroli V. 9365
Fusco C. see Curci R. 115
Fusco C. see Curci R. 249
Fusetani N. see Fukuzawa S. 1447
Fusetani N. see Tsukamoto S. 1439

Fusetani N. see Tsukamoto S. 5555
Fusetani N. see Ushio-Sata N. 225
Fusi S. see Donati D. 5783
Futagawa T. see Sugimura T. 7303
Futaki S. Ishikawa T. Niwa M. Yagami T. and Kitagawa K. Pseudo-symmetrical protein: construction of a four-helix-bundle protein with four intramolecular disulfide cross-linkings 201

Gabbutt C. D. Heron B. M. Hepworth J. D. and Rahman M. M. The generation and reactions of 3,4-didehydro-2*H*-[1]benzo-pyran, a highly strained heterocycle 1313
Gaggero N. see Alphand V. 6117
Gai Y. see Hanessian S. 7473
Gai Y. see Hanessian S. 7477
Gaikar V. G. see Khadilkar B. M. 1719
Gala D. DiBenedetto D. J. Clark J. E. Murphy B. L. Schumacher D. P. and Steinman M. Preparations of antifungal Sch 42427/SM 9164: preparative chromatographic resolution, and total asymmetric synthesis via enzymatic preparation of chiral α-hydroxy arylketones 611
Gala D. DiBenedetto D. J. Mergelsberg I. and Kugelman M. Total chiral synthesis of azole antifungals via α-hydroxylation of ketones 8117
Galatsis P. Manwell J. J. and Millan S. D. Stereochemical consequences in the deprotonation of enoates 5261
Gale P. A. Sessler J. L. Lynch V. and Sansom P. I. Synthesis of a new cylindrical calix[4]arene–calix[4]pyrrole pseudo dimer 7881
Galéotti N. Coste J. Bedos P. and Jouin P. A straightforward synthesis of α-amino phosphonate monoesters using BroP or TPyClU 3997
Galili N. see Becker D. 8941
Gallagher M. J. see Grice I. D. 1087
Galley G. Hübner J. Anklam S. Jones P. G. and Pätzel M. Diastereoselective conjugate addition and cyclopropanation reactions with nitroalkenes derived from (*R*)-2,3-isopropylidene glyceraldehyde 6307
Galli A. see Speranza G. 4247
Galopin C. C. Zhang S. Wilson D. B. and Ganem B. On the mechanism of chorismate mutases: clues from wild-type *E. coli* enzyme and a site-directed mutant related to yeast chorismate mutase 8675
Galt R. H. B. Hitchcock P. B. McCarthy S. J. and Young D. W. Formation of a medium ring imino ether by a diazo insertion reaction 8035
Gálvez N. Moreno-Mañas M. Vallribera A. Molins E. and Cabrero A. Cobalt-mediated alkylation of (4*R*) and (4*S*)-3-acetoacetyl-4-benzyloxazolidin-2-ones. Preparation of enantiopure diphenylmethyl-, 9-fluorenyl- and (1-adamantyl)glycines 6197
Gamba A. see Gandolfi R. 917
Gamba Invernizzi A. see Quadrelli P. 1909
Gamble M. P. Giblin G. M. P. Montana J. G. O'Brien P. Ockendon T. P. and Taylor R. J. K. Amino acid derived thiane oxide and dioxide systems as disposable templates: synthesis of α-amino ketones, *anti*-amino alcohols and an amino cyclopentenone 7457
Gamble M. P. Studley J. R. and Wills M. New chiral phosphinamide catalysts for highly enantioselective reduction of ketones 2853
Gamlin J. N. Olovsson G. Pitchumani K. Ramamurthy V. Scheffer J. R. and Trotter J. Cation to anion triplet–triplet energy transfer in crystalline organic salts 6037
Gamlin J. N. see Borecka B. 2121
Gan T. and Cook J. M. General approach for the synthesis of macroline/sarpagine related indole alkaloids via the asymmetric Pictet–Spengler reaction: the enantiospecific synthesis of (–)-anhydromacrosalhine-methine 5033
Gan T. and Cook J. M. Partial synthesis of the antiamoebic bisindole alkaloid (–)-macrocarpamine 5037
Gandhi S. S. see Qiu D. 595
Gandolfi R. Amade' M. S. Rastelli A. Bagatti M. and Montanari D. Enhancement in facial selectivity of a plane nonsymmetric double bond induced by a conjugating methoxycarbonyl group 517
Gandolfi R. Amade' M. S. Rastelli A. and Bagatti M. π-Facial diastereoselectivity in electrophilic additions and 1,3-dipolar cycloadditions to bicyclo[2.2.2]oct-2-enes 5,6-*cis*,*exo*-disubstituted with electron withdrawing groups 1321
Gandolfi R. Gamba A. Presutto M. Oberti R. and Sardone N. New base induced rearrangements of 4-acylisoxazolidines. Anionic reactional cascades from five membered rings to either four membered rings or open chain compounds 917
Ganem B. see Galopin C. C. 8675
Ganem B. see Ponasik J. A. 6041
Gangadhar B. P. see Sivanandaiah K. M. 5989
Gangopadhyay A. K. see Lal B. 2483
Gangopadhyay P. see Sarkar T. K. 6607
Gangopadhyay P. see Sarkar T. K. 8627
Ganguly A. K. see Jao E. 5661
Ganguly A. K. see Saksena A. K. 5657
Ganguly A. K. see Saksena A. K. 6821
Ganguly A. K. see Shankar B. B. 4095
Gani D. see Hartzoulakis B. 6911
Gani D. see Hormozdiari P. 8227
Gani D. see Mehrotra A. P. 6915
Gano J. E. see Cheng J. 2721
Gao Q. and Chen S.-H. An unprecedented side chain conformation of paclitaxel (Taxol®): crystal structure of 7-mesylpaclitaxel 3425
Gao Q. see Kant J. 6495
Gao W. Sakaguchi K. Isoe S. and Ohfune Y. Stereoselective synthesis of a marine natural product, (±)-6β-isovaleroxylabda-8,13-diene-7α,15-diol 7071
Gao Y. Shirai M. and Sato F. Synthesis of substituted pyrroles from an alkyne, an imine and carbon monoxide via an organotitanium intermediate 7787
Gao Y. Wu W.-L. Ye B. Zhou R. and Wu Y.-L. Convenient syntheses of tonghaosu and two thiophene substituted spiroketal enol ether natural products 893

Gao Y. see Tamagnan G. 4353
Gaon I. Turek T. C. and Distefano M. D. Farnesyl and geranylgeranyl pyrophosphate analogs incorporating benzoylbenzyl ethers: synthesis and inhibition of yeast protein farnesyltransferase 8833
Gaon I. see Turek T. C. 4845
Garber L. T. see Evans P. A. 2927
García C. F. see Doyle M. P. 4129
García G. A. see Méndez J. M. 4099
García H. see Alvaro M. 2873
García J. I. see Fraile J. M. 5995
García J. J. Sierra C. and Torrens H. Facile cyclotrimerization of $CF_3C{\equiv}CH$ and $CF_3C{\equiv}CCF_3$ with bimetallic rhodium catalysts 6097
García J. M. see Palomo C. 4565
García J. M. see Palomo C. 6931
García M. E. Gavin J. A. Deng N. Andrievsky A. A. and Mallouk T. E. Combinatorial synthesis of modular chiral cyclophanes 8313
García S. see Alvaro M. 2873
García-Grávalos M. D. see Norte M. 2671
García-López M. T. see Suárez-Gea M. L. 2083
García-López Mª T. see Martín-Martínez M. 2471
García-Navio J. L. see Minguez J. M. 4263
García-Navio J. L. see Vega J. A. 6413
García Ruano J. L. Martín Castro A. M. and Rodriguez Ramos J. H. Anchimeric assistance of the sulfinyl group in the hydrolysis of cyano groups: a new mild method for the reduction of sulfoxides 4569
García Ruano J. L. see Carreño M. C. 4081
García-Rubio S. see Solé D. 5213
García-Zafra S. see Molina P. 9353
Gardiner J. M. Nørret M. and Sadler I. H. Diastereospecific epoxidation/AE kinetic resolution of *cis/trans*-2,6-dimethylbenzylidene cyclohexane and solution conformation of 4,8-dimethyl-2-phenyl-1-oxaspiro-[2.5]octane 8447
Gardinier I. Roignant A. Oget N. Bernard H. Yaouanc J. J. and Handel H. Trivalent protecting groups for the synthesis of symmetrical and unsymmetrical bis-tetraazamacrocycles 7711
Gardossi L. see Ebert C. 9377
Garg R. see Donohoe T. J. 3407
Gargano M. see Ravasio N. 3529
Garín J. see Leriche P. 8861
Garín J. see Martín N. 5979
Garlaschelli L. Vidari G. and Vita-Finzi P. Tricholomenyns C, D, and E, novel dimeric dienyne geranyl cyclohexenones from the fruiting bodies of *Tricholoma acerbum* 6223
Garnier L. Plunian B. Mortier J. and Vaultier M. Diels–Alder reactions of 1,3-dienylborate salts with activated dienophiles 6699
Garrido N. M. see Urones J. G. 1659
Gaslain Y. see Alami M. 57
Gassman P. G. Tan L. and Hoye T. R. Intramolecular cationic cyclizations initiated by electrocyclic cleavage of cyclopropanes. Synthesis of trienic cyclopentane derivatives 439
Gastaldi S. see Bertrand M.-P. 1229
Gates K. S. see Kim W. 6425
Gates K. S. see Kim W. 5337
Gatilov Y. V. see Khlestkin V. K. 5997
Gatilov Y. V. see Polovinka M. P. 2631
Gau R. A. see Butler D. N. 2825
Gaucher A. see Mazaleyrat J.-P. 2971
Gaudemer A. Fanet C. Gaudemer F. and Salmon L. Synthesis of D-arabinohydroxamic acid and D-threonohydroxamic acid, potent inhibitors of D-xylose isomerases 2237
Gaudemer A. see Bonnette C. 1221
Gaudemer F. see Gaudemer A. 2237
Gaudino J. J. see Mayer J. P. 8081
Gauthier S. and Labrie F. New synthesis of 2,3-disubstituted and 2,2,3-trisubstituted 2*H*-1-benzothiopyran derivatives 5077
Gauthier, Jr D. R. and Bender S. L. An approach to pancratistatin from *myo*-inositol 13
Gautier I. Ratovelomanana-Vidal V. Savignac P. and Genêt J.-P. Asymmetric hydrogenation of β-ketophosphonates and β-ketothiophosphonates with chiral Ru(II) catalysts 7721
Gavagnin M. Mollo E. Cimino G. and Ortea J. A new γ-dihydropyrone-propionate from the Caribbean sacoglossan *Tridachia crispata* 4259
Gavagnin M. see Ungur N. 3549
Gavin J. A. see Garcia M. E. 8313
Gayatri N. L. see Kamal A. 3359
Gayo L. M. and Suto M. J. Use of pentafluorophenyl esters for one-pot protection/activation of amino and thiol carboxylic acids 4915
Gašic M. J. see Šolaja B. A. 3765
Ge Y. see Shimano K. 2253
Ge Y. see Tamura S. Y. 4109
Gedney A. see Taylor G. M. 1297
Gee K. R. Sun W.-C. Klaubert D. H. Haugland R. P. Upson R. H. Steinberg T. H. and Poot M. Novel derivatization of protein thiols with fluorinated fluoresceins 7905
Geen G. R. see Bell D. 3895
Geib S. J. see Zafar A. 2327
Geiger M. see Aurich H. G. 841
Geisel U. see Berkessel A. 355
Gelas J. see Ripoche I. 3991
Gellon G. see Provent C. 1393
Genet J.-P. see Darses S. 3857
Genêt J.-P. see Gautier I. 7721
Genêt J.-P. see Lemaire-Audoire S. 2003
Genêt J.-P. see Montalbetti C. 2225
Genêt J. P. see Girard A. 7967
Genêt J. P. see Greck C. 2031
Genet R. see Hammadi A. 3309
Genkinger O. and Bargon J. Mercury-photosensitized dehydrodimerization reactions with cyclic ethers 6853
Gennari C. and Pain G. Boron aldol reaction of α-halosubstituted thioacetates with silyl imines: a highly enantio- and diastereoselective synthesis of aziridines 3747
Gennari C. see Gude M. 8589
Genov M. see Dimitrov V. 6787
Gentes C. see Aurich H. G. 841
Geraci C. Piattelli M. and Neri P. Regioselective synthesis of calix[8]crowns by direct alkylation of *p-tert*-butylcalix[8]arene 3899
Geraci C. Piattelli M. and Neri P. Inherent chirality in calix[8]arenes exploiting the steric constraint of two

intercrossing polyether chains 7627
Geraghty N. W. A. see Audley M. 1641
Gerard J. Haden P. Kelly M. T. and Andersen R. J. Loloatin B, a cyclic decapeptide antibiotic produced in culture by a tropical marine bacterium 7201
Gerlach B. and Smith K. M. A convenient synthetic approach to 8-vinyl-chlorophyll derivatives 5431
Gerothanassis I. P. Cobb J. Kimbaris A. Smith J. A. S. and Varvounis G. ^{17}O and ^{14}N NMR studies of quinoxaline-2(1*H*),3(4*H*)-diones and *N,N'*-substituted oxamides: the first experimental evidence of torsion angle deformation resulting from an unprecedented through six-bond substituent effect on the diamide group of quinoxaline-2(1*H*),3(4*H*)-diones 3191
Gerothanassis I. P. Troganis A. and Vakka C. The first experimental evidence of differential hydration of *E/Z* isomers of sterically hindered amides: one dimensional steady-state selective intermolecular ^{13}C, ^{1}H Overhauser effect study of *tert*-butylformamide 6569
Gersch B. Lehn J.-M. and Greil E. Synthesis of new dibenzo-diaza-crown ethers 2213
Gerster M. Audergon L. Moufid N. and Renaud P. Simple and efficient stereocontrol of radical allylations of β-hydroxy esters 6335
Gervay J. see Flaherty T. M. 961
Gerwick W. H. see Graber M. A. 4635
Gestin J. F. see Mishra A. K. 7515
Gèze C. see Poignant G. 7511
Ghaffarzadeh M. see Matloubi Moghaddam F. 1855
Ghaneolhosseini H. see Tjarks W. 6905
Ghelfi F. see Forti L. 2077
Ghiron C. Piga E. Rossi T. Tamburini B. and Thomas R. J. The stereoselective synthesis of a key intermediate of the trinem antibiotic sanfetrinem 3891
Ghorai B. K. see Sarkar T. K. 8627
Ghorai B. K. see Sarkar T. K. 6607
Ghosh A. see Zhang D. 3799
Ghosh A. C. see Baruah M. 4559
Ghosh A. C. see Bhuyan P. J. 1853
Ghosh A. C. see Bordoloi M. 6791
Ghosh A. C. see Boruah A. 4203
Ghosh A. K. Mathivanan P. and Cappiello J. Conformationally constrained bis(oxazoline) derived chiral catalyst: a highly effective enantioselective Diels–Alder reaction 3815
Ghosh S. Easwaran K. R. K. and Bhattacharya S. Synthesis of novel disulfide containing macrocyclic diacylglycerols 5769
Ghosh S. Nandi B. and Saima Y. Studies on enamides—V. A novel pathway for photochemical reaction of *N*-1-cyclohexenyl-*N*-phenylaryl-amides 3169
Ghosh S. Patra D. and Samajdar S. Intramolecular [2 + 2] photocycloaddition—cyclobuta ne rearrangement. A novel stereocontrolled approach to highly substituted cyclopentanones 2073
Ghosh S. see Sarkar S. 4809
Gibert M. see Ferrer M. 3585
Giblin G. M. P. see Gamble M. P. 7457
Gibson K. R. see Paterson I. 8585
Giese B. see Peukert S. 4365
Giese B. see Roth M. 351
Giese B. see Tronche C. 5845
Giffard M. see Leriche P. 5115
Gilbert J. C. see Marchand A. P. 8101
Gilbert L. see Ruiz J. 4511
Gilbert P. see Beddoes R. L. 9119
Gilbert P. see Dekhane M. 1883
Gilbert P. Lewis M. L. Quayle P. Zhao Y. and Mills K. α-Alkoxystannyl ethers in organic synthesis: synthesis of functionalised γ-butyrolactones 9115
Gilbertson S. R. and Wang X. The combinatorial synthesis of chiral phosphine ligands 6475
Giles R. G. F. Joll C. A. Sargent M. V. and Tilbrook D. M. G. A metal-mediated diastereo-selective synthesis of precursors to the aphid pigment derivatives 7851
Gill G. B. Pattenden G. and Roan G. A. Cobalt π-cations in carbocyclic ring constructions 9369
Gillespie K. see Howarth J. 6011
Gillies I. and Rees C. W. Amide anions as unexpected activating groups in nucleophilic heteroaromatic substitution 4065
Gillman K. W. see Schlessinger R. H. 1331
Gillmann T. and Heckhoff S. Aza-enyne allenes: thermal reaction behavior of 2,4,5-hexatrienenitriles 839
Gin D. Y. see Corey E. J. 7163
Giralt E. see Alsina J. 4195
Giralt E. see Valero M.-L. 4229
Girard A. Greck C. Ferroud D. and Genêt J. P. Syntheses of the *syn* and *anti* α-amino-β-hydroxy acids of vancomycin: (2*S*,3*R*) and (2*R*,3*R*) *p*-chloro-3-hydroxytyrosines 7967
Girard C. Mandville G. Shi H. and Bloch R. Stereocontrolled synthesis of 2,5-disubstituted di- and tetrahydrofurans 63
Giridhar D. E. see Norris P. 3925
Girijavallabhan V. M. see Saksena A. K. 6821
Girijavallabhan V. M. see Jao E. 5661
Girijavallabhan V. M. see Saksena A. K. 5657
Girol C. see Piettre S. R. 4711
Giroux A. see Black W. C. 4471
Giroux A. see Charette A. B. 6669
Giugliano A. see Bonini C. 2487
Giusti G. see Salemi-Delvaux C. 5127
Giusto R. A. see Andrews D. R. 3417
Givens R. S. and Park C.-H. *p*-Hydroxyphenacyl ATP: a new phototrigger 6259
Givens R. S. see Hohman J. R. 8273
Glaçon V. El Meslouti A. Uzan R. Demailly G. and Beaupère D. A new efficient way to α,ω-diaminoitols by direct azidation of unprotected itols 3683
Gleiter R. and Stahr H. π-Cages—syntheses and properties of cyclic siladiynes and bicyclic disilatriynes 1179
Gleiter R. and Wolfart V. 1,8-Diazabicyclo[6.6.6]eicosa-4,11,17-triyne and 1,8-diazacyclotetradeca-4,11-diyne. Syntheses and properties 479
Gleye C. Laurens A. Hocquemiller R. Figadère B. and Cavé A. Muridienin-1 and -2: the

missing links in the biogenetic precursors of acetogenins of annonaceae 9301
Glink P. T. see Ashton P. R. 6217
Glisan King A. Meinwald J. Eisner T. and Blankespoor C. L. Synthesis of 9-propyl-10-azacyclododecan-12-olide 2141
Glories Y. see Vivas N. 2015
Gobbi L. see Ernst A. 7959
Gockel U. see Schulze M. M. 357
Goda K. see Tsunoda T. 2457
Godard A. see Mongin F. 6695
Goddard R. see Reetz M. T. 9293
Goddard R. see Zimmermann K. 8371
Godebout V. Lecomte S. Levasseur F. and Duhamel L. Chiral β-lithio enol ethers: synthesis and properties 7255
Godjoian G. Wang V. R. Ayala A. M. Martínez R. V. Martínez-Bernhardt R. and Gutiérrez C. G. Substituted triethylene glycols from dibutylstannylene acetals 433
Goel A. see Ram V. J. 93
Goel O. P. see Chen H. G. 8129
Goesmann H. see Knölker H.-J. 6543
Goetz M. A. see Singh S. B. 8077
Goff D. A. and Zuckermann R. N. The synthesis of 2-oxopiperazines by intramolecular Michael addition on solid support 6247
Goldberg D. R. see Crowe W. E. 2117
Goldstein D. M. and Wipf P. Studies toward the synthesis of *Stemona* alkaloids; a short synthesis of the tricyclic core of tuberostemonines 739
Golobish T. D. and Dailey W. P. Synthesis and structure of bishomohexaprismanedione 3239
Golz T. see Klärner F.-G. 1385
Gómez A. M. see Valverde S. 1105
Gómez Arrayás R. see Carretero J. C. 3379
Gomez Pardo D. see Cossy J. 6709
Gomez Pardo D. see Cossy J. 8173
Gong Y. see Xiang Y. 4877
Gonser P. see Knölker H.-J. 2405
Gonser P. see Knölker H.-J. 6543
Gontcharov A. V. see Pearson A. J. 3087
Gonzales S. S. Jacobs H. K. Juarros L. E. and Gopalan A. S. A study of the intramolecular cyclization reactions of some derivatives of 3-arylsulfonyl cycloalkanols 6827
González A. see Palomo C. 4565
González A. see Palomo C. 6931
González C. Guitián E. and Castedo L. A new intramolecular aryne cycloaddition approach to lycorines 405
González C. C. see Francisco C. G. 1687
Gonzalez J. and Carroll F. I. Bromine-promoted cyclization of an olefinic α-aminonitrile: a practical synthesis of 5-aminocarbonyl-10,11-dihydro-5*H*-dibenzo[*a,d*]cycloheptene-5,10-imine (ADCI) 8655
González L. see Posner G. H. 815
González Á. Aiguadé J. Urpí F. and Vilarrasa J. Asymmetric acetate aldol reactions in connection with an enantioselective total synthesis of macrolactin A 8949
González-Muñiz R. see Martín-Martínez M. 2471
González-Muñiz R. see Suárez-Gea M. L. 2083
González-Núñez M. E. see Asensio G. 2299
Goodman B. A. see Mayer J. P. 5633
Goodman J. L. see Stoub D. G. 4927
Goodman S. N. see Wood J. L. 7335
Goon S. see Meth-Cohn O. 9381
Gopalan A. S. see Gonzales S. S. 6827
Gopalaswamy R. and Koreeda M. On the mechanism of the stereo- and regioselective ether-ring opening of 1,2,3,4-tetrahydro-1β,4β-epoxy-2α,3α-carbonyldioxy arene systems with boron tribromide 3651
Gopalaswamy R. see Koreeda M. 8267
Gordeev M. F. Patel D. V. Wu J. and Gordon E. M. Approaches to combinatorial synthesis of heterocycles: solid phase synthesis of pyridines and pyrido[2,3-*d*]pyrimidines 4643
Gordeev M. F. see Szardenings A. K. 3635
Gordon E. M. see Gordeev M. F. 4643
Goré J. see Cavicchioli M. 1429
Goré J. see David K. 3333
Goré J. see David K. 3335
Goré J. see Surivet J.-P. 371
Gorgues A. see Leriche P. 5115
Gorgues A. see Leriche P. 8861
Gorin B. I. Riopelle R. J. and Thatcher G. R. J. Efficient perfacial derivatization of cyclodextrins at the primary face 4647
Gorrichon L. see Escudier J.-M. 4689
Gosmann G. Guillaume D. and Husson H.-P. Asymmetric synthesis—XLI. Totally stereoselective synthesis of 1,3-disubstituted tetrahydroisoquinolines via the CN(*R,S*) method 4369
Gossauer A. see Mongin O. 3825
Goti A. and Nannelli L. Synthesis of nitrones by methyltrioxorhenium catalyzed direct oxidation of secondary amines 6025
Goto K. Holler M. and Okazaki R. Synthesis and structure of a novel molecular bowl with an all-carbon and acyclic framework 3141
Goto K. see Saiki T. 4039
Goto K. see Ueoka R. 3461
Goto M. see Saiki T. 4039
Goto M. see Ueki M. 4953
Goto Y. see Tagawa Y. 69
Goubet F. and Teutsch G. Conversion of a thiohydantoin to the corresponding hydantoin via a ring-opening/ring closure mechanism 7727
Gough G. R. Miller T. J. and Mantick N. A. *p*-Nitrobenzyloxymethyl: a new fluoride-removable protecting group for ribonucleoside 2'-hydroxyls 981
Gouilleux L. Fehrentz J.-A. Winternitz F. and Martinez J. Solid phase synthesis of chiral 3-substituted quinazoline-2,4-diones 7031
Goulle V. see Shi Z. 2357
Gourdel-Martin M.-E. and Huet F. Stereospecific synthesis of (*Z,E*)-dienes. An experimental verification of Houk's group theoretical predictions for nitrogen substituents 7745
Gouverneur V. and Lalloz M.-N. *N*-Hydroxy-α-amino

phosphonate derivatives as potential haptens for eliciting catalytic antibodies 6331
Gouverneur V. see Schlama T. 7047
Govardhan C. P. see Persichetti R. A. 6507
Graber M. A. Gerwick W. H. and Cheney D. P. The isolation and characterization of agardhilactone, a novel oxylipin from the marine red alga *Agardhiella subulata* 4635
Grabowski S. and Prinzbach H. *De novo* syntheses of enantiopure glycosyl donors of D-/L-azapurpurosamine C type—enzymatic asymmetrizations 7951
Graf E. see Hajek F. 1401
Graf E. see Hajek F. 1409
Graf E. see Mislin G. 4503
Graham A. E. McKerrecher D. Davies D. H. and Taylor R. J. K. Sonogashira coupling reactions of highly oxygenated vinyl halides: the first synthesis of harveynone and *epi*-harveynone 7445
Gramain J.-C. see Ibrahim-Ouali M. 37
Granberg K. see Hanessian S. 9001
Grandclaudon P. see Couture A. 3697
Grandclaudon P. see Couture A. 7749
Grande M. see Raposo C. 1485
Gras-Masse H. see Klinguer C. 7259
Graziano M. L. Lasalvia M. Piccialli V. and Sica D. Reaction of small-size cycloalkane rings with RuO_4. Oxidative scission of ethyl 2,2-dimethoxycyclopropane-1-carboxylates and methyl 2,2,6,6-tetramethoxy-bicyclo[2.2.0]hexane-1-carboxylates 527
Grech J. M. see Kocovsky P. 1125
Grech J. M. see Kocovsky P. 5585
Greck C. Ferreira F. and Genêt J. P. Synthesis of both enantiomers of *trans* 3-hydroxypipecolic acid 2031
Greck C. see Girard A. 7967
Greco M. N. see Maryanoff B. E. 3667
Grée D. see Kermarrec C. 5691
Grée R. see Kermarrec C. 5691
Grée R. see Legoupy S. 1225
Greef C. H. Seeberger P. H. Caruthers M. H. Beaton G. and Bankaitis-Davis D. Synthesis of phosphorodithioate RNA by the H-phosphonothioate method 4451
Green, III F. R. see Fields S. C. 1967
Greer A. see Clennan E. L. 6093
Greeves N. Pease J. E. Bowden M. C. and Brown S. M. Enantioselective addition of organocerium reagents to aldehydes—effects of TADDOL ligand structure 2675
Greeves N. and Pease J. E. Enantioselective addition of tris(TADDOL) organocerium reagents to aldehydes 5821
Greidanus G. see Black W. C. 4471
Greiner A. see David K. 3333
Greiner A. see David K. 3335
Grell E. see Gersch B. 2213
Gremyachinsky D. E. see Samoshin V. V. 3981
Gribble G. W. and Silva R. A. Synthesis of a Mexican bean beetle azamacrolide allomone via a novel lactam to lactone ring expansion 2145
Grice I. D. Harvey P. J. Jenkins I. D. Gallagher M. J. and Ranasinghe M. G. Phosphitylation via the Mitsunobu reaction 1087
Grice I. D. see Adam W. 2113
Gridnev I. D. see Bubnov Y. N. 1317
Grieco P. A. Cowen S. D. and Mohammadi F. Synthetic studies on highly oxygenated quassinoids: total synthesis of (±)-14β,15β-dihydroxyklaineanone 2699
Grieco P. A. DuBay W. J. and Todd L. J. Lithium cobalt-bis-dicarbollide catalyzed substitution reactions of allylic acetates 8707
Grieco P. A. see Henry, Jr K. J. 8289
Griepink F. C. van Beek T. A. Posthumus M. A. de Groot A. Visser J. H. and Voerman S. Identification of the sex pheromone of *Scrobipalpula absoluta*; determination of double bond positions in triple unsaturated straight chain molecules by means of dimethyl disulphide derivatization 411
Grierson D. S. see Benhida R. 1031
Griesbeck A. G. Hundertmark T. and Steinwascher J. Regio- and diastereoselective formation of 1,2-azidohydroperoxides by photooxygenation of alkenes in the presence of azide anions 8367
Griesbeck A. G. see Buhr S. 1195
Griesinger C. see Köck M. 363
Griffin G. see Riggs J. A. 6303
Griffiths R. C. Watson A. A. Kizu H. Asano N. Sharp H. J. Jones M. G. Wormald M. R. Fleet G. W. J. and Nash R. J. The isolation from *Nicandra physalodes* and identification of the 3-*O*-β-D-glucopyranoside of 1α,2β,3α,6α-tetrahydroxy-*nor*-tropane (calystegine B_1) 3207
Griffiths R. C. see Bell A. A. 8561
Griffiths R. C. see Davis B. 8565
Griffiths R. C. see Shilvock J. P. 8569
Grigg R. Loganathan V. and Sridharan V. Palladium catalysed cascade alkyne–arene vinylation/alkylation approach to polyfused heterocycles 3399
Grigg R. Putnikovic B. and Urch C. J. Palladium catalysed ter- and tetra-molecular queuing processes. One-pot routes to 3-spiro-2-oxindoles and 3-spiro-2(3*H*)-benzofuranones 695
Grigg R. Rasul R. Redpath J. and Wilson D. Palladium catalysed cascade bis-cyclisation–anion capture processes proceeding via allenyl-palladium(II) starter species. 1-Vinyl-3-azabicyclo-[3.1.0]hexanes 4609
Grigg R. Sridharan V. and Terrier C. Palladium catalysed cyclisation-allene insertion-anion capture cascades 4221
Grigg R. and Savic V. Palladium catalysed termolecular queuing cascades. Facile cyclisation-anion capture routes to heterocyclic dienes via allene insertion processes 6565
Grigg R. and Xu L.-H. Palladium catalysed [4 + 2]-cycloaddition reactions of (2-iodoaryl)allenes 4251
Grigg R. see Casaschi A. 4413
Grindley T. B. and Namazi H. The regioselective synthesis of non-glycosidically linked oligosaccharides 991
Grison C. see Coutrot P. 1595
Groff R. see Wright D. L. 2165
Grogan M. J. see Corey E. J. 4899
Gröger H. Saida Y. Arai S. Martens J. Sasai H. and

Shibasaki M.
First catalytic asymmetric hydrophosphonylation of cyclic imines: highly efficient enantioselective approach to a 4-thiazolidinylphosphonate via chiral titanium and lanthanoid catalysts 9291
Grollman A. P. see Varaprasad C. V. 9
Gross E. K. M. see Burgess L. E. 3255
Gross Z. Ini S. Kapon M. and Cohen S.
First utilization of a homochiral ruthenium porphyrin as enantioselective epoxidation catalyst 7325
Grote J. see Adamczyk M. 7913
Grové J. J. C. Holzapfel C. W. and Williams D. B. G.
Stereoselective SmI_2-mediated conversion of carbohydrates into cyclopentanols 1305
Grové J. J. C. Holzapfel C. W. and Williams D. B. G.
One-pot SmI_2-promoted transformation of carbohydrate derivatives into cyclopentanols 5817
Grundt P. see Dyker G. 619
Gstach H. see Yan B. 8325
Gu X. and Sponsler M. B.
Iodine-induced transannular coupling of 1,6-cyclodecadiyne 1571
Gu Y. see Zeng X. 3009
Gu Y. G. and Bayburt E. K.
Synthesis of 4-alkyl-3,5-dibromo-, 3-bromo-4,5-dialkyl- and 3,4,5-trialkylpyridines via sequential metalation and metal–halogen exchange of 3,5-dibromopyridine 2565
Guanti G. see Banfi L. 521
Guarna A. see Machetti F. 4205
Gude C. see Bhagwat S. S. 4627
Gude M. Piarulli U. Potenza D. Salom B. and Gennari C.
A new method for the solution and solid phase synthesis of chiral β-sulfonopeptides under mild conditions 8589
Gudmundsdottir A. D. see Borecka B. 2121
Gudmundsson K. S. Drach J. C. and Townsend L. B.
The condensation of 2,6-dichloroimidazo[1,2-*a*]pyridine with ribonolactone gives a novel imidazo[1,2-*a*]pyridine C-nucleoside with an unexpected site of ribosylation 2365
Gudmundsson K. S. Drach J. C. and Townsend L. B.
Palladium catalyzed coupling of 2,6-dichloro-3-iodoimidazo[1,2-*a*]pyridine and 2,3-dihydrofuran as an approach to novel imidazo[1,2-*a*]pyridine C-nucleosides 6275
Guedj R. see Farèse A. 1413
Guéguen C. Mitchell H. J. O'Brien P. and Warren S.
Highly stereoselective hydroxy–alkylation, silylation and alkylation reactions of lithium derivatives of chiral phosphine oxides 7461
Guéguen C. see Cavalla D. 7465
Guella G. see N'Diaye I. 3049
Guénard D. see Marder R. 1777
Guéritte-Voegelein F. see Marder R. 1777
Guerra-Weltzien L. see Comins D. L. 3807
Guglielmetti G. see Chiavetto L. B. 1091
Guglielmetti R. see Salemi-Delvaux C. 5127
Guidi A. and Arcamone F.
Semisynthesis of a highly functionalized daunorubicin derivative 1123
Guijarro A. Ortiz J. and Yus M.
O-tert-Butyl-*N*-(chloromethyl)-*N*-methyl carbamate as a source of the $MeNHCH_2^-$ synthon 5597
Guijarro A. and Yus M.
N-(Chloromethyloxycarbonyl)-pyrrolidine as a source of the $HOCH_2^-$ synthon 5593
Guilhem J. see Mazaleyrat J.-P. 2971
Guilhot F. see Caballero E. 6951
Guillaume D. see Charrouf-Chafchaouni Z. 5099
Guillaume D. see Gosmann G. 4369
Guillaumet G. see Viaud M.-C. 2409
Guillemin J.-C. see Legoupy S. 1225
Guillerm G. see Evina C. M. 163
Guillou C. Millot N. Reboul V. and Thal C.
Synthesis of cationic 1-substituted-dicarbonyl(η^5-4-methoxycyclohexadienyl)(triphenylphosphine)iron complexes 4515
Guise-Zawacki L. E. see Crimmins M. T. 6519
Guitián E. see González C. 405
Gum A. G. see Butora G. 8155
Gung B. W. and Zhu Z.
Enhanced intramolecular amide–amide hydrogen bonding through cooperativity 2189
Günther H. see Böhler B. 8719
Günther H. see Böhler B. 8723
Guo D. Jia Z. and Nes W. D.
Phytosterol biosynthesis: isotope effects associated with biomethylation formation to 24-alkene sterol isomers 6823
Guo D. see Zhou W. 1339
Guo J. see Jacobi P. A. 6069
Guo L. see Yang L. 5041
Gupta A. K. Samal S. K. Ila H. and Junjappa H.
Trimethyl borate induced thermal cycloaromatization of 1-aryl-1-(prop-2-ynyl)-3,3-bis(alkylthio)-2-propen-1-ols through acetylenic oxy-Cope rearrangement 2817
Gupta S. see Denk M. K. 9025
Gupta S. C. Saini A. Sharma S. Kapoor M. and Dhawan S. N.
A photochemical synthesis of spiropyrans 8913
Gupton J. T. see Yamanaka H. 1829
Gurjar M. K. Henri, Jr J. T. Bose D. S. and Rama Rao A. V.
Total synthesis of a potent immunosuppressant pironetin 6615
Gurjar M. K. Kumar P. and Venkateswara Rao B.
Stereocontrolled synthesis of spirocyclopropane sugars and their application to asymmetric formation of tertiary chiral centres: a route to 2,2'-dialkylated pyranose subunit (C_{18}–C_{23}) of lasonolide A 8617
Gush K. A. see Kerr R. G. 8305
Gutierrez A. J. and Froehler B. C.
RNA Duplex formation by oligodeoxynucleotides containing C-5 alkyne and C-5 thiazole substituted deoxyuridine analogs 3959
Gutiérrez C. G. see Godjoian G. 433
Guy P. see Dupraz A. 1237
Guyot M. see Bourguet-Kondracki M.-L. 3861
Guyot M. see Bourguet-Kondracki M. L. 3457
Guyot M. see Meyer M. 4931
Guyoton S. see El Kaim L. 375
Guzi T. J. and Macdonald T. L.
A novel synthesis of piperidin-3-ones via an intramolecular Amadori-type reaction 2939
Gwaltney, II S. L. and Shea K. J.
Bridged to fused ring interchange. The total synthesis of (±)-ledol 949
Gyambibi I. see Afarinkia K. 4801
Gyarmati J. see Kovács G. 1293

Ha D.-C. Kil K.-E. Choi K.-S. and Park H.-S.
Studies on the diastereoselective alkylation of enolate dianion of (*S*)-4-carboethoxymethyl-2-oxazolidinone 5723
Ha D.-C. Yun C.-S. and Yu E.
Reductive cyclization of *N*-iodoalkyl cyclic imides to nitrogen-fused polycyclic amides induced by samarium diiodide 2577
Ha H.-J. Kang K.-H. Suh J.-M. and Ahn Y.-G.
A new synthesis of aziridine-2-carboxylates by reaction of hexahydro-1,3,5-triazines with alkyldiazoacetates in the presence of tin(IV) chloride 7069
Ha S. B. and Nair V.
An improved approach to the synthesis of adenosine-5'-*N*-ethyluronamides of interest as adenosine receptor agonists 1567
Haas Y. see Fajgar R. 3391
Habashita H. see Ibuka T. 2849
Habib Jiwan J. L. see Ayadim M. 7039
Habus I. see Iyer R. P. 1539
Habus I. see Iyer R. P. 1543
Hachiken H. see Miki Y. 7753
Hachiya I. see Kobayashi S. 2053
Hachiya I. see Kobayashi S. 2809
Hachiya I. see Kobayashi S. 4183
Hachiya I. see Kobayashi S. 5569
Hachiya I. see Kobayashi S. 7783
Hada C. Banciu M. D. Mattalia J.-M. and Chanon M.
Clear cut example of preference for a 6-membered ring radical cyclisation over the homologous 5-membered ring radical cyclisation. The reaction of 5-[bromoalkyl]-5*H*-dibenzo[*a,d*]cycloheptenes with Bu_3SnH 3845
Haddad M. and Larchevêque M.
Asymmetric synthesis of the Abbott amino dihydroxyethylene dipeptide isostere subunit 4525
Haddad N. Abramovich Z. and Ruhman I.
Stereoselective synthesis of spiroethers and spiroketals via photoaddition of dihydro-4-pyrones to 1,3-dioxin-4-ones 3521
Haddad N. and Kuzmenkov I.
Synthesis of substituted phenols via photoaddition–fragmentation–aromatic annelation sequence 1663
Haddad N. see Becker D. 8941
Haden P. see Gerard J. 7201
Hadida S. see Amat M. 3071
Hadida S. see Amat M. 5217
Hadimani S. B. Tanpure R. P. and Bhat S. V.
Asymmetric total synthesis of (–)podophyllotoxin 4791
Haenel M. W. see Zimmermann K. 8371
Haff L. A. see Timofeev E. N. 8467
Hafner K. see Schardt S. 3829
Hageman D. L. see Wright S. W. 4631
Hageman D. L. see Wright S. W. 6965
Hagiwara H. and Kato M.
Direct 1,4-addition of aldehydes to vinylketones 5139
Hagiwara T. Tanaka K. and Fuchikami T.
Functional group transformation of α-trifluoromethylated alcohol derivatives 8187
Hagmann L. and Jüttner F.
Fischerellin A, a novel photosystem-II-inhibiting allelochemical of the cyanobacterium *Fischerella muscicola* with antifungal and herbicidal activity 6539
Hahn P. J. see Kaldor S. W. 7193
Haigh D. see Buck R. T. 7631
Haigh D. see Ferris L. 107
Haino T. see Chou T. 4027
Hajek F. Graf E. Hosseini M. W. Delaigue X. De Cian A. and Fischer J.
Molecular tectonics—I. The first synthesis and X-ray analysis of a linear koilate obtained by self-assembly of linear koilands and hexadiyne 1401
Hajek F. Graf E. and Hosseini M. W.
Multicavitands—IV. Synthesis of linear koilands obtained by fusion of calix[4]arene derivatives by silicon atoms 1409
Hakimelahi G. H. see Hwu J. R. 2035
Halazy S. see Perez M. 8487
Halcomb R. L. see Freeman-Cook K. D. 4883
Hale K. J. Cai J. and Delisser V. M.
Asymmetric synthesis of the C(1)–C(47) backbone of antitumour antibiotic A83586C 9345
Hale K. J. and Cai J.
Synthetic studies on the azinothricin family of antitumour antibiotics—V. Asymmetric synthesis of two activated esters for the northern sector of A83586C 4233
Hale M. R. see Young D. G. J. 827
Hallberg A. see Larhed M. 8219
Halterman R. L. and Mei X.
Synthesis of D_2-symmetric 5,10,15,20-tetraarylporphyrins from C_2-symmetric benzaldehydes and achiral aryldipyrromethanes 6291
Haltiwanger R. C. see Witty D. R. 3067
Hama K. see Tagawa Y. 69
Hamachi I. Matsugi T. and Shinkai S.
Transition-metals facilitated electron transfer of semi-synthetic myoglobin bearing bis(iminodiacetic acid) moiety 9233
Hamachi K. Irie R. and Katsuki T.
Asymmetric benzylic oxidation using a Mn–salen complex as catalyst 4979
Hamada H. see Itoh T. 5001
Hamada Y. Seto N. Ohmori H. and Hatano K.
New monodentate chiral phosphine 2,6-dimethyl-9-phenyl-9-phosphabicyclo-[3.3.1]nonane(9-PBN): application to asymmetric allylic substitution reaction 7565
Hamada Y. see Deng J. 2261
Hamana M. see Tagawa Y. 69
Hamano K. see Tanaka T. 7809
Hamilton A. D. see Zafar A. 2327
Hammadi A. Ménez A. and Genet R.
E/Z-configurational assignment of *N*-acetyl-α,β-dehydrotryptophan ethyl ester produced by L-tryptophan 2',3'-oxidase from *Chromobacterium violaceum* 3309
Hammond M. see Myers A. G. 3083
Hammond M. see Myers A. G. 587
Hamper B. C. Dukesherer D. R. and South M. S.
Solid-phase synthesis of proline analogs via a three component 1,3-dipolar cycloaddition 3671
Hamper B. C. see Kolodziej S. A. 5277
Han S. Y. see Park K. K. 6721
Han Y. Huang Y.-Z. and Zhou C.-M.
An unexpected reaction between 2-aryl-1-nitro-1-alkenes and trialkylgallium compounds 3347
Han Y. Walker S. D. and Young R. N.
Silicon directed *ipso*-

substitution of polymer bound arylsilanes: preparation of biaryls via the Suzuki cross-coupling reaction 2703
Han Y. see Liao S. 7917
Hanack M. see Segura J. L. 2503
Hanafi N. see Sebti S. 6555
Hanaoka M. see Mukai C. 5389
Handa S. see Less S. L. 3511
Handa S. see Less S. L. 3515
Handel H. see Gardinier I. 7711
Hanessian S. Gai Y. and Wang W.
Stereocontrolled functionalization in acyclic systems by exploiting internal 1,2-asymmetric induction—generation of polypropionate and related motifs 7473
Hanessian S. Ninkovic S. and Reinhold U.
The synthesis of 4,5-methano congeners of α-kainic and α-*allo*-kainic acids as probes for glutamate receptors 8971
Hanessian S. Reinhold U. and Ninkovic S.
The stereocontrolled synthesis of enantiopure α-methano heterocycles and constrained amino acid analogs 8967
Hanessian S. Tehim A. Meng Q. and Granberg K.
A remarkably facile and stereochemically controlled fragmentation reaction in the hygrolide group of macrolide antibiotics 9001
Hanessian S. Wang W. and Gai Y.
Stereocontrolled sequential functionalization in acyclic systems by exploiting internal 1,2-asymmetric induction—generation of symmetry-related polyamino alcohol motifs 7477
Hanessian S. and Devasthale P. V.
Generation of functional diversity via nitroaldol condensations of α-aminoacid aldehydes—a new and stereocontrolled route to acyclic 1,3-diamino-2-alcohols 987
Hanessian S. and Yang R.-Y.
The asymmetric synthesis of allylglycine and other unnatural α-amino acids via zinc-mediated allylation of oximes in aqueous media 5273
Hanessian S. and Yang R.-Y.
Solution- and solid-phase synthesis of 5-alkoxy-hydantoin libraries with a three-fold functional diversity 5835
Hanessian S. and Yang R.-Y.
Enantioselective allylation of α-ketoester oximes with an external chiral ligand: asymmetric synthesis of allylglycines and allylalanine 8997
Hanisch C. see Coudret J. L. 2425
Hanna I. Prangé T. and Zeghdoudi R.
Synthesis of a highly functionalized AB taxane ring system using 1,4-dioxene 7013
Hanna M. R. see Cebula R. E. J. 8341
Hanna N. B. see Reddy M. P. 8691
Hanon-Aragon K. A. see West C. A. 9135
Hansen H. C. Hindsgaul O. and Bols M.
Synthesis of tributyltin-methylated sugars, building blocks for tethered reactions 4211
Hansen K. B. see McClure C. K. 2149
Hansen L. T. see Bols M. 2097
Hanson M. V. see Kim S.-H. 2197
Hanxing L. see Alvarez E. 2865
Hao X.-J. see Dai W.-M. 5971
Hao X.-J. see Fuji K. 7373
Haque M. B. and Roberts B. P.
Enantioselective radical-chain hydrosilylation of prochiral alkenes using optically active thiol catalysts 9123
Hara O. see Fujii K. 389
Hara S. Chen S.-Q. Hoshio T. Fukuhara T. and Yoneda N.
Electrochemically induced fluorinative ring expansion of cycloalkylideneacetates 8511
Harada K. Fujii K. Hayashi K. Suzuki M. Ikai Y. and Oka H.
Application of D,L-FDLA derivatization to determination of absolute configuration of constituent amino acids in peptide by advanced Marfey's method 3001
Harada T. see Ikeda A. 1621
Haramuishi K. see Shuto S. 187
Harano K. see Eto M. 2445
Harayama H. Okuno H. Takahashi Y. Kimura M. Fugami K. Tanaka S. and Tamaru Y.
Chemoselective intramolecular aminocarbonylation of unsaturated amides under Wacker-type conditions 7287
Hardy G. W. see Shaw-Ponter S. 1867
Harger M. J. P.
Nucleophilic substitution in benzylic phosphonothioic dichlorides formation of a diamide without intervention of the amidic chloride 8247
Harigaya Y. see Konda Y. 4015
Harkema S. see Boerrigter H. 5167
Harm A. M. Knight J. G. and Stemp G.
Asymmetric copper-catalysed alkene cyclopropanation and aziridination using tartrate-derived bis-oxazoline ligands 6189
Harmata M. Carter K. W. Jones D. E. and Kahraman M.
The metallation of Troeger's base 6267
Harmata M. and Jones D. E.
Intramolecular 4 + 3 cycloadditions. Vinylthionium ions from allylic alcohols 783
Harms A. E. see Trost B. M. 3971
Harris B. D. see Zhang H.-C. 7897
Harris W. see Dinh P. M. 7623
Harrison B. Talapatra S. Lobkovsky E. Clardy J. and Crews P.
The structure and biogenetic origin of (–) halicyclamine B from a *Xestospongia* sponge 9151
Harrison L. J. see Venkatraman G. 2643
Harrison T. see Hodgson D. M. 4623
Harrowven D. C. and Dainty R. F.
A sliding cyclohexane rearrangement mediated by zirconium tetrachloride 3607
Harrowven D. C. and Dainty R. F.
Zirconium tetrachloride as a mediator for ambient temperature *ortho*-Fries rearrangements 7659
Harrowven D. C. and Poon H. S.
Changing course with an additive: a striking example of the effect of TMSCl on lithium amide reactivity 4281
Hart A. see Chu M. 3943
Hart A. see Chu M. 7229
Hart D. J. and Wu W.-L.
Observations regarding the first step of the Julia–Lythgoe olefin synthesis 5283
Hartzoulakis B. Rutherford T. J. Ryan M. D. and Gani D.
Synthesis and properties of a biocompatible analogue for β-turn protein structural motifs based on 5-amino-3-pentynoic acid 6911
Harvey P. J. see Grice I. D. 1087
Harvey T. see Andrews I. P. 4811
Harwood L. M. Tucker T. T. Angell R. and Finch H.
A novel synthetic route to

morpholin-2,3-diones from 2-aminoalcohols 4217
Hase Y. see Shuto S. 641
Hasegawa E. Kato T. Kitazume T. Yanagi K. Hasegawa K. and Horaguchi T. Photoinduced electron transfer reactions of α,β-epoxy ketones with 2-phenyl-*N,N*-dimethylbenzimidazoline (PDMBI): significant water effect on the reaction pathway 7079
Hasegawa E. see Kamata M. 3483
Hasegawa E. see Kamata M. 7779
Hasegawa J. see Yoshimatsu M. 7381
Hasegawa K. see Hasegawa E. 7079
Haseltine J. see Fan Y.-H. 9279
Hashimoto H. see Imamura M. 1451
Hashimoto H. see Izumi M. 1809
Hashimoto H. see Suzuki K. 5921
Hashimoto K. Kitaguchi J. Mizuno Y. Kobayashi T. and Shirahama H. A new reagent for the preparation of chiral HMGA (3-hydroxy-3-methylglutaric acid) esters and amides. Synthesis of (*R*)- and (*S*)-β-carboxymethyl-β-methyl-β-lactones by asymmetric desymmetrization of HMGA anhydride 2275
Hashimoto M. see Yamamura K. 4965
Hashimoto M. see Yoshino T. 3475
Hashimoto N. Kawamura S. Ishizuka T. and Kunieda T. Reversal of stereoselection in diastereodivergence of *meso*-dicarboxylic anhydrides 9237
Hashimoto S. see Makino K. 9073
Hashimoto S. see Makino K. 9077
Hashimoto S. see Mori K. 8523
Hashimoto T. see Kouda K. 4541
Hashimoto T. see Liu H.-J. 9307
Hashimoto T. see Morita H. 3739
Hashimoto Y. see Liu C. 6177
Haskins N. J. see New A. P. 3039
Hassner A. see Balasubramanian T. 5755
Hatakeyama D. see Kadota I. 3059
Hatakeyama S. Fukuyama H. Mukugi Y. and Irie H. Total synthesis of (+)-conagenin 4047
Hatakeyama S. Fukuyama H. Mukugi Y. and Irie H. Corrigendum 4287
Hatanaka K. Morita Y. Ohba T. Yamaguchi K. Takui T. Kinoshita M. and Nakasuji K. Detection of new neutral radicals: 2-phenyl- and 2-*p*-methoxyphenyl-3-oxophenalenoxyl radicals 873
Hatanaka K. Morita Y. Ohba T. Yamaguchi K. Takui T. Kinoshita M. and Nakasuji K. Dimer formation and detection of neutral radical: 2,5-dimethyl-6-oxophenalenoxyl radical 877
Hatanaka M. Ishida A. Tanaka Y. and Ueda I. Single-step synthesis of cyclopentenones from (3-alkoxycarbonyl-2-oxopropylidene)triphenylphosphorane and 1,2-diacylethylenes 401
Hatanaka M. Ueno F. and Ueda I. Synthesis of (±)-pentalenene via regioselective intramolecular Diels–Alder reaction of trisubstituted cyclopentadiene 89
Hatanaka M. see Islam Md. S. 5735
Hatano K. see Hamada Y. 7565
Hattori T. Koike N. Okaishi Y. and Miyano S. Highly stereospecific conversion of planar chirality of a cyclophane into axial chirality of binaphthyls 2057
Hauck S. I. see Jacobi P. A. 6069
Haufe G. see Ernet T. 7251
Haugan J. A. First total synthesis of (all-*E*)-(3*S*,5*R*,6*R*)-paracentrone 3887
Haugland R. P. see Gee K. R. 7905
Hayakawa I. see Toyota A. 8507
Hayakawa R. Shimizu M. and Fujisawa T. Ethyl (*R*)-3-hydroxy-4-phenylthiobutyrate: synthesis by the Baker's yeast reduction and use as a precursor of enantiomerically pure β-lactam 7533
Hayakawa Y. Yamamoto H. Tsuge N. and Seto H. Structure of a new microbial metabolite, neuchromenin 6363
Hayase T. see Shibata T. 8783
Hayashi K. see Harada K. 3001
Hayashi M. see Murakami M. 7541
Hayashi M. see Yoshimatsu M. 4161
Hayashi N. Fujiwara K. and Murai A. Fused cyclic ether formations from bromo-diepoxides by AgOTf-promoted successive ring expansion reactions 6173
Hayashi T. Kishi E. Soloshonok V. A. and Uozumi Y. *erythro*-Selective aldol-type reaction of *N*-sulfonylaldimines with methyl isocyanoacetate catalyzed by gold(I) 4969
Hayashi T. see Kamikawa T. 3161
Hayashi T. see Kitayama K. 4169
Hayashi T. see Soloshonok V. A. 7845
Hayashi T. see Takai K. 7049
Hayashi Y. see Kuramoto M. 3867
Hayes C. J. and Pattenden G. α-Ketene alkyl and α,β-unsaturated acyl radical intermediates in ring constructions 271
Hayes C. J. see Foote K. M. 275
Hayes P. Dujardin G. and Maignan C. (*S*)-(+)-3-*p*-Tolylsulfinylbut-3-en-2-one: a spectacular oxabutadiene for asymmetric cycloaddition of styrenic compounds 3687
Haynes R. K. Lam W. W.-L. and Yeung L.-L. Stereoselective preparation of functionalized tertiary P-chiral phosphine oxides by nucleophilic addition of lithiated *tert*-butylphenylphosphine oxide to carbonyl compounds 4729
Haynes R. K. and Vonwiller S. C. The behaviour of qinghaosu (artemisinin) in the presence of heme iron(II) and (III) 253
Haynes R. K. and Vonwiller S. C. The behaviour of qinghaosu (artemisinin) in the presence of non-heme iron(II) and (III) 257
Haynes R. K. see Lam W. W.-L. 4733
Hazra N. K. see Mal D. 2641
Headley A. D. Patel B. and Cheung E. T. Solvation effects on the tautomerization of *N,N*-dimethylvaline 6673
Heaney F. see McKiernan M. T. 4597
Heaney H. Shuhaibar K. F. and Slawin A. M. Z. The capture of acetonitrile during a Bischler–Napieralski

cyclisation reaction of an oxamide derivative 4275
Heap C. R. see Burke S. D. 343
Heath P. C. see Audia J. E. 4121
Heckhoff S. see Gillmann T. 839
Heckmann B. Mioskowski C. Bhatt R. K. and Falck J. R. Grignard additions to α,β-unsaturated dioxolanones: preparation of chiral allylic alcohols and protected α-hydroxy aldehydes 1421
Heckmann B. Mioskowski C. Lumin S. Falck J. R. Wei S. and Capdevila J. H. Chiral acetals: stereo-controlled synthesis of 16-, 17-, and 18-hydroxyeico-satetraenoic acids, cytochrome P-450 arachidonate metabolites 1425
Heeg M. J. see Rigby J. H. 2553
Heer J. P. see Page P. C. B. 2515
Heid, Jr R. M. see Devine P. N. 2683
Heiligenstädt N. see Dehmlow E. V. 5363
Heitz A. see Paris M. 8489
Helal C. J. see Corey E. J. 4837
Helal C. J. see Corey E. J. 5675
Helmchen G. see Langer T. 1381
Hemmings D. A. see Malpass J. R. 3911
Hena M. A. see Kiyooka S. 2597
Hénin J. see Noé E. 5701
Hénin J. see Noé E. 8823
Hennard C. see Wong-Lun-Sang S. 3329
Hennig L. see Kempin U. 5087
Henri, Jr J. T. see Gurjar M. K. 6615
Henry G. E. Jacobs H. Carrington C. M. S. McLean S. and Reynolds W. F. Plukenetione A. An unusual adamantyl ketone from *Clusia plukenetii* (guttiferae) 8663
Henry S. S. see Pryde D. C. 3243
Henry, Jr K. J. Grieco P. A. and DuBay W. J. A novel approach to iboga alkaloids: total synthesis of (±)-ibogamine and (±)-*epi*-ibogamine 8289
Henschke J. P. and Rickards R. W. Biomimetic synthesis of the microbial elicitor syringolide 2 3557
Henssen C. L. A. see Tjarks W. 6905
Henze B. Marquis D. Marsau P. Cotrait M. and Desvergne J. P. Synthesis and cation complexing properties of a new dissymmetrical fluorescent coronand 5499
Heo P.-Y. Shin K. and Lee C.-H. Stepwise syntheses of core-modified, *meso*-substituted porphyrins 197
Heo P.-Y. Shin K. and Lee C.-H. Corrigendum 1521
Hepworth J. D. see Gabbutt C. D. 1313
Hérault D. A. see Berkessel A. 355
Herbert R. B. see Bradley E. L. 7329
Herbert R. B. see Bradley E. L. 6935
Hercouet A. Bessières B. Le Corre M. and Toupet L. Synthesis of optically active 2,3-methanopipecolic acid 4529
Herczegh P. see Kovács-Kulyassa A. 2499
Herdewijn P. see Andersen M. W. 8147
Herlem D. Ouazzani J. and Khuong-Huu F. Chemistry of larixol—I. Degradation of the side-chain and microbial hydroxylation 1241
Hermann C. see Hong B. 583
Hernández R. Velázquez S. M. Suárez E. and Prangé T. Fragmentation of peroxyhemiacetals. Stereoselective synthesis of 1,2-dioxolanes 6409
Hernandez S. Kirchhoff M. M. Swartz, Jr S. G. and Johnson R. P. 1,2,3-Cyclooctatriene 4907
Herndon J. W. see Hill D. K. 1359
Heron B. M. see Gabbutt C. D. 1313
Herradón B. see Valverde S. 1105
Herradura P. see Jacobi P. A. 8297
Herranz R. see Martín-Martínez M. 2471
Herranz R. see Suárez-Gea M. L. 2083
Herrera C. J. see Mayer J. P. 5633
Herrero S. see Suárez-Gea M. L. 2083
Herrick R. S. Jarret R. M. Curran T. P. Dragoli D. R. Flaherty M. B. Lindyberg S. E. Slate R. A. and Thornton L. C. Ordered conformations in bis(amino acid) derivatives of 1,1'-ferrocenedi-carboxylic acid 5289
Herrmann D. Bisseret P. Connan J. and Rohmer M. Relative configurations of carbapseudopentose moieties of hopanoids of the bacterium *Zymomonas mobilis* and the cyanobacterium '*Anacystis montana*' 1791
Herzog K. J. see McClure C. K. 2153
Heupel F. A. see Baldwin J. E. 6919
Heuser A. see Waldmann H. 8725
Hext N. M. see Mascal M. 131
Hibbs D. E. see Black G. P. 6943
Hibino S. see Choshi T. 2593
Hiemstra H. see Bernabé P. 3561
Hiemstra H. see Louwrier S. 905
Hiemstra H. see Luker T. 8257
Higa T. see Jefford C. W. 159
Higa T. see Tanaka J. 5535
Higashi K. see Hori H. 2785
Higuchi H. Hiraiwa N. Kondo S. Ojima J. and Yamamoto G. 5,10-Dimethyl[13]annulenone: the first monocyclic annulenone larger than tropone 2601
Higuchi H. Koyama H. Yokota H. and Ojima J. Solvent effect on the bathochromic shifts of push–pull dihexylbithiophenes with head-to-head and head-to-tail orientations 1617
Higuchi K. see Ishikawa T. 4393
Higuchi R. see Sugata T. 2613
Hildreth J. E. K. see Suhara Y. 4827
Hildreth J. E. K. see Suhara Y. 1575
Hildreth J. E. K. see Suhara Y. 2549
Hill D. K. and Herndon J. W. Conformational requirements of a stereospecific three- to five-carbon ring expansion reaction 1359
Hill D. R. Celebuski J. E. Pariza R. J. Chorghade M. S. Levenberg M. Pagano T. Cleary G. West P. and Whittern D. Novel macrolides via *meso*-tetraarylmetalloporphyrin assisted oxidations 787
Hilvert D. see Kast P. 2691
Hindsgaul O. see Hansen H. C. 4211
Hintz S. Fröhlich R. and Mattay J. PET-Oxidative cyclization of unsaturated silyl enol ethers.

Regioselective control by solvent effects 7349
Hlouni A. and Duhamel L. 2,2-Di(ethoxy)vinyllithium: reactions with carbonyl compounds 5507
Hiraga Y. see Ohta S. 2265
Hiraga Y. see Ohta S. 7765
Hirai S. see Mukai C. 5389
Hiraiwa N. see Higuchi H. 2601
Hirama M. see Iida K. 4997
Hirama M. see Reddy R. S. 9335
Hirama M. see Sato I. 5135
Hirama S. see Uneyama K. 2045
Hirano T. see Mimaki Y. 1245
Hiranuma S. see Shimizu T. 6145
Hirao T. see Zhang W. 4545
Hirashita T. see Araki S. 8417
Hirata F. see Ueoka R. 3461
Hirohara M. see Arai Y. 4381
Hirosawa C. Wakasa N. and Fuchikami T. Hydrogenation of amides by the use of bimetallic catalysts consisting of group 8 to 10, and group 6 or 7 metals 6749
Hirosawa T. see Iwasaki Y. 6753
Hirota H. see Tsukamoto S. 1439
Hirota H. see Tsukamoto S. 5555
Hiroya K. see Kamikubo T. 499
Hirschmann R. Yao W. Arison B. Maechler L. Rosegay A. Sprengeler P. A. and Smith, III A. B. The first synthesis of a tricyclic homodetic peptide employing coordinated orthogonal protection 5637
Hisamatsu M. see Teranishi K. 8425
Hitchcock P. B. see Davies G. M. 5601
Hitchcock P. B. see Galt R. H. B. 8035
Hitotsuyanagi Y. see Takano I. 7053
Hiyama T. see Furuta S. 7983
Hiyama T. see Shimizu M. 7387
Hlasta D. J. see Court J. J. 1335
Ho D. M. see Atkins J. H. 7217
Ho D. M. see Barnett-Thamattoor L. 7221
Ho D. M. see Pascal, Jr R. A. 8125
Ho N.-H. see Iyer R. P. 1539
Hoang A. see Czernecki S. 8857
Hoberg J. O. and Claffey D. J. Corrigendum 3217
Hoberg J. O. and Claffey D. J. Cyclopropanation of unsaturated sugars with ethyl diazoacetate 2533
Hocquemiller R. see Duret P. 7043
Hocquemiller R. see Gleye C. 9301
Hodgson D. M. Bailey J. M. and Harrison T. A cycloaddition–rearrangement approach to the squalestatins 4623
Hodgson D. M. and Comina P. J. A remarkable base-induced rearrangement of epoxydisilanes 5613
Hoemann M. Z. Agrios K. A. and Aubé J. Total synthesis of curacin A 953
Hofer K. G. see Yang L.-X. 6081
Hoffman R. V. Patonay T. Nayyar N. K. and Tao J. A short enantiospecific synthesis of a protected *seco* acid precursor to (*R,R*)-(–)-pyrenophorin 2381
Hoffmann H. M. R. see Lampe T. F. J. 7695
Hoffmann L. see Klein D. 7519
Hoffmann N. and Pete J.-P. Acid catalyzed intramolecular photochemical reactions of 3-alkenyloxyphenols 2027
Hoffmann R. W. and Kahrs B. C. Heptan-1,3,5,7-tetrol-diacetonides, flexible backbone segments with a marked conformational preference 4479
Hofmann C. see Knölker H.-J. 7947
Hofmann J. Schulz K. and Zimmermann G. Thermal ring enlargement of aromatic cyclopentadienyl-idene iminyl radicals. Intra-molecular radical addition to the N atom of nitriles results in high yields of aza-aromatics 2399
Hofsløkken N. Flock S. Skattebøl L. Michael additions to 3(2*H*)-thiophenone 1,1-dioxide 119
Hogan E. M. see MacDonald A. A. 4815
Hogan M. E. see Lamture J. B. 6483
Hohman J. R. Givens R. S. Carlson R. G. and Orosz G. Synthesis and chemi-luminescence of a protected peroxyoxalate 8273
Hojo H. Kojima T. Yamauchi K. and Kinoshita M. Synthesis and liposome-formation of a thermostable lipid bearing cell adhesion peptide sequence 7391
Hojo M. Aihara H. Ito H. and Hosomi A. 'Tailor-made' carbonyl ylides: [3 + 2] cycloaddition of the parent and optionally substituted nonstabilized carbonyl ylides 9241
Holler M. see Goto K. 3141
Hollinshead S. P. Stereoselective synthesis of highly functionalised pyrrolidines via 1,3-dipolar cycloaddition reactions on a solid support 9157
Holme D. W. see Audia J. E. 4121
Holmes R. E. see Neel D. A. 4891
Holy A. see Dvoráková H. 1285
Holzapfel C. W. and van der Merwe T. L. Palladium-catalysed [3 + 2]-cycloaddition reactions employing sulphonyl-activated unsaturated carbohydrate derivatives 2303
Holzapfel C. W. and van der Merwe T. L. Nitro-activated double bonds in Pd(0)-catalysed [3 + 2]-cycloaddition reactions 2307
Holzapfel C. W. see Grové J. J. C. 1305
Holzapfel C. W. see Grové J. J. C. 5817
Hombrecher H. K. see Vicente M. G. H. 261
Honda K. see Ushio-Sata N. 225
Hondo T. see Miura K. 487
Hondo T. see Miura K. 8539
Hong B. Fox M. A. Maier G. and Hermann C. Electrochemical oxidation of two silyl-substituted tetrahedranes 583
Hong B. and Sun S. [6 + 3] Cycloaddition of fulveneketene acetal 659
Hong J. see Noh D.-Y. 7603
Hong J.-I. see Lee S. B. 8501
Hong J. Y. see Kim D. 1433
Hooper G. J. Davies-Coleman M. T. Kelly-Borges M. and Coetzee P. S. New alkaloids from a South African latrunculid sponge 7135
Hopke J. see Schierle K. 8715
Hopper D. W. Catalano J. G. and Macdonald T. L. Facile synthesis of lysophospholipids containing unsaturated fatty acid chains 7871
Horaguchi T. see Hasegawa E. 7079
Hori H. Higashi K. Ishiyama T. Uramoto M. Uehara Y. and Oki T. Structure of angelmicin B, a novel *src* signal transduction inhibitor 2785
Hori H. see Sato K. 2799
Hori K. Kodama H. Ohta T. and Furukawa I.

Palladium-catalyzed asymmetric 1,3-dipolar cycloaddition of nitrones to olefins 5947
Hori Y. see Oriyama T. 8543
Horie O. see Neeb P. 9297
Horikawa C. see Matsumura Y. 5715
Horikawa C. see Matsumura Y. 8063
Horikawa H. see Sakurai O. 7811
Horita K. see Matsushima T. 385
Hormozdiari P. and Gani D. Highly efficient solid-phase phosphopeptide synthesis using bis-(polyfluorophenyl) chlorophosphates: preparation of serine–threonine protein phosphatase substrates 8227
Horn T. Chaturvedi S. Balasubramaniam T. N. and Letsinger R. L. Oligonucleotides with alternating anionic and cationic phosphoramidate linkages: synthesis and hybridization of stereo-uniform isomers 743
Horne D. A. see Xu Y. 8121
Horner J. H. see Tronche C. 5845
Horns S. see Czernecki S. 4003
Horton D. see Norris P. 3925
Horváth A. Catalysis and regioselectivity in the Michael addition of azoles. Kinetic versus thermodynamic control 4423
Horváth J. see Skoda-Földes R. 2085
Hosangadi B. D. and Dave R. H. An efficient general method for esterification of aromatic carboxylic acids 6375
Hoshina Y. see Togo H. 6129
Hoshino M. see Seto H. 4179
Hoshino Y. see Murakami M. 7541
Hoshio T. see Hara S. 8511
Hosokawa S. see Kawagishi H. 7399
Hosomi A. see Hojo M. 9241
Hosomi A. see Miura K. 487
Hosomi A. see Miura K. 8539
Hosomi A. see Miura K. 9059
Hosoya T. Ohashi Y. Matsumoto T. and Suzuki K. On the stereochemistry of aryl *C*-glycosides: unusual behavior of bis-TBDPS protected aryl *C*-olivosides 663
Hosoya Y. Adachi H. Nakamura H. Nishimura Y. Naganawa H. Okami Y. and Takeuchi T. The structure of diphenazithionin, a novel antioxidant from *Streptomyces griseus* ISP 5236 9227
Hossain M. A. see Farina V. 6997
Hosseini M. W. Brand G. Schaeffer P. Ruppert R. De Cian A. and Fischer J. Molecular tectonics—II. Synthesis of molecular sheets by self-assembly of complementary molecular units in the solid state 1405
Hosseini M. W. see Hajek F. 1401
Hosseini M. W. see Hajek F. 1409
Hosseini M. W. see Mislin G. 4503
Hosseini M. W. see Schneider R. 4721
Hossler K. A. see Riggs J. A. 6303
Hou X.-L. see Wang D.-K. 4187
Houille O. Schmittberger T. and Uguen D. A remarkably simple process for monoprotecting diols 625
Houk K. N. see de Pascual-Teresa B. 1759
Houkawa T. Ueda T. Sakami S. Asaoka M. and Takei H. Complementary diastereoselective β-acylation of α-methylbutanamide 1045
Hoveyda A. H. see Morken J. P. 3613
Hoveyda A. H. see Young D. G. J. 827
Howard J. A. K. see Batsanov A. S. 2491
Howard K. J. see Jones R. C. F. 1707
Howard K. J. see Jones R. C. F. 1711
Howarth J. and Gillespie K. Investigations into the use of niobium and tantalum complexes as Lewis acids 6011
Howarth J. A. see Crowley P. J. 5975
Howarth J. A. see Dinh P. M. 7623
Howell A. R. Fan R. and Truong A. Preparation of 2-alkylidene oxetanes: an investigation of the Paterno– Büchi reaction between aliphatic aldehydes and allenes 8651
Howells M. E. see Ackland M. J. 691
Howes P. D. and Smith P. W. Sialidase inhibitors related to GG167: synthesis of analogues via an inverse demand hetero Diels–Alder reaction 6595
Hoye T. R. and Chen M. Total synthesis of (*ent*)-korupensamine D 3099
Hoye T. R. and Mi L. Total syntheses of korupensamine C and ancistrobrevine B 3097
Hoye T. R. see Gassman P. G. 439
Hoz S. see Sella A. 5573
Hruby V. J. see Liao S. 1563
Hruby V. J. see Liao S. 7917
Hsu C.-H. see Chou S.-S. P. 5373
Hu B. see Barton D. H. R. 1133
Hu B. see Barton D. H. R. 1755
Hu B. see Barton D. H. R. 8329
Hu T. Curtis J. M. Walter J. A. and Wright J. L. C. Characterization of biologically inactive spirolides E and F: identification of the spirolide pharmacophore 7671
Hu Y. Skalitzky D. J. and Rychnovsky S. D. Prins cyclization of 4-allyl-1,3-dioxanes prepared from 1,3-diol synthons. A rapid entry into functionalized tetrahydropyrans 8679
Hua T. D. Rolland-Fulcrand V. Lazaro R. Viallefont P. Lefranc M.-P. and Weill M. Detection of enzyme activity at trace levels: a new perspective for the direct screening of active catalytic antibodies 175
Huang H. and Platz M. S. Intermolecular chemistry of a cyclopropylcarbene and its mechanistic implications 8337
Huang J.-Y. see Chou S.-S. P. 7279
Huang J. J. see Spaltenstein A. 1343
Huang S. see Crimmins M. T. 6519
Huang S. see Kant J. 6495
Huang S.-C. see Wu T.-S. 7819
Huang W.-Y. see Yu H.-B. 7999
Huang X. and Wang Y.-P. Stereoselective synthesis of (*Z*)- or (*E*)-β-bromovinyl tellurides and their application in the synthesis of trisubstituted alkenes 7417
Huang X. see Shi G. 5401
Huang Y. see Breslow R. 2541
Huang Y.-Z. see Han Y. 3347
Huang Z. see Taylor S. D. 8089
Huber E. W. see Waid P. P. 4091
Huber R. S. see Jones G. B. 3643
Hübner J. see Galley G. 6307
Hudlicky T. see Butora G. 8155
Hudner J. F. see Andrews I. P. 4811
Hudnott A. R. see Dinh P. M. 7623
Hudson R. D. A. Osborne S. A. Roberts E. and Stephenson G. R. Long-range asymmetric

induction by conjugate addition to alkenylcyclohexadienyliron complexes 9009
Hueso-Rodríguez J. A. see New A. P. 3039
Huet F. see Gourdel-Martin M.-E. 7745
Huff B. E. LeTourneau M. E. Staszak M. A. and Ward J. A. Protection, metalation, and electrophilic substitution of 5-methyl tetrazole 3655
Hughes A. D. Price D. A. Shishkin O. and Simpkins N. S. Diastereoselective enolate chemistry using atropisomeric amides 7607
Hughes D. L. see Cai D. 2537
Hughes D. L. see Senanayake C. H. 3271
Hughes I. Application of polymer-bound phosphonium salts as traceless supports for solid phase synthesis 7595
Hüls D. see Böhler B. 8719
Hummel W. see Seelbach K. 1377
Humphrey G. R. see Miller R. A. 3429
Humphrey G. R. see Wells K. M. 6439
Hundertmark T. see Griesbeck A. G. 8367
Hung S.-C. and Wong C.-H. Synthesis of glycosyl chlorides with acid-labile protecting groups 4903
Hung S.-C. see Alper P. B. 6029
Hungate R. W. Chen J. L. Starbuck K. E. Macaluso S. A. and Rubino R. S. New cytochalasins: synthetic studies of a novel HIV-1 protease inhibitor 4113
Hunkler D. see Mathew T. 4491
Hunter C. A. and Sarson L. D. Azobenzene-porphyrins 699
Huppé S. see Boivin J. 8735
Hurley T. B. see Sammakia T. 4427
Hursthouse M. B. see Black G. P. 6943
Huryn D. M. see Liu A. 3785
Hussain N. see Andrews I. P. 4811
Husson H.-P. see Besson L. 3307
Husson H.-P. see Gosmann G. 4369
Husson H.-P. see Micouin L. 849
Hutchens T. W. see Voivodov K. I. 5669
Hutchins S. M. and Chapman K. T. Solid phase synthesis of tetrahydroisoquinolines and tetrahydroimidazopyridines 4865
Hutchins S. M. and Chapman K. T. Fischer indole synthesis on a solid support 4869
Hutchison D. R. Nayyar N. K. and Martinelli M. J. A simple and general synthesis of 4-oxo-4,5,6,7-tetrahydroindoles via a novel intramolecular 1,3-dipolar cycloaddition approach 2887
Hutton G. see Adger B. 6399
Huynh-Dinh T. see Kreimeyer A. 8739
Hwang C.-K. see Bennani Y. L. 8109
Hwang J.-T. see Crich D. 3105
Hwang S.-W. Adiyaman M. Khanapure S. P. and Rokach J. Total synthesis of 12-*epi*-$PGF_{2\alpha}$ 779
Hwang S.-W. see Adiyaman M. 4849
Hwu C.-C. see Lai M.-L. 6149
Hwu J. R. Jain M. L. Tsay S.-C. and Hakimelahi G. H. Ceric ammonium nitrate in the deprotection of *tert*-butoxycarbonyl group 2035

Iacuone A. see Cardellicchio C. 6017
Iadonisi A. see Adinolfi M. 5007
Iadonisi A. see Adinolfi M. 5987
Ibarzo J. see Ortuño R. M. 4059
Ibrahim-Ouali M. Sinibaldi M.-E. Troin Y. and Gramain J.-C. Photocyclization of enamino-esters: access to 2,3-dihydro-indoles spiroimides 37
Ibuka T. Akaji M. Mimura N. Habashita H. Nakai K. Tamamura H. Fujii N. and Yamamoto Y. A thermodynamic preference of chiral *cis*-γ,δ-epimino-(*E*)-α,β-unsaturated esters over other stereoisomers: synthetically useful Pd(0)-catalyzed equilibrated reactions of aziridines bearing an α,β-unsaturated ester group 2849
Ichihara A. see Jiao Y. 1039
Ichihara A. see Nara S. 6745
Ichihara A. see Oikawa H. 6169
Ichihara A. see Toshima H. 5707
Ichikawa J. Fujiwara M. Nawata H. Okauchi T. and Minami T. Novel 2,2-difluorovinylzirconocene: a facile synthesis of monosubstituted *gem*-difluoroolefins via its cross-coupling reaction 8799
Ichikawa M. see Igarashi Y. 2707
Ichikawa M. see Igarashi Y. 4827
Ichikawa M. see Suhara Y. 2549
Ichikawa Y. see Igarashi Y. 2707
Ichikawa Y. see Igarashi Y. 4827
Ichikawa Y. see Suhara Y. 1575
Ichikawa Y. see Suhara Y. 2549
Ichikawa Y. see Suhara Y. 4827
Ichimura A. see Yano M. 9207
Ichise M. see Ohyama M. 5155
Igarashi Y. Ichikawa M. and Ichikawa Y. Synthesis of a potent inhibitor of β-glucuronidase 2707
Igarashi Y. Ichikawa M. and Ichikawa Y. Corrigendum 4827
Iglesias J. M. see Andrés C. 9085
Ignatenko A. V. see Bubnov Y. N. 1317
Iguchi S. see Reddy R. S. 9335
Ihara M. see Tokunaga Y. 6157
Ihara Y. see Ueoka R. 3461
Iida A. Konishi K. Kubo H. Tomioka K. Tokuda H. and Nishino H. Trichothecinols A, B, and C, potent anti-tumor promoting sesquiterpenoids from the fungus *Trichothecium roseum* 9219
Iida K. Fukuda S. Tanaka T. Hirama M. Imajo S. Ishiguro M. Yoshida K. and Otani T. Absolute configuration of C-1027 chromophore 4997
Iida K. see Sato I. 5135
Iimori T. Shibazaki T. and Ikegami S. A novel intramolecular decarboxylative glycosylation via mixed carbonate 2267
Iimori T. Takahashi H. and Ikegami S. Palladium chloride mediated rearrangement of 6-deoxyhex-5-enopyranosides into cyclohexanones 649
Iinuma M. see Ohyama M. 5155
Iio K. see Kita Y. 7545
Ikai Y. see Harada K. 3001
Ikariya T. see Xiao J. 2813
Ikawa H. see Matsumoto M. 397
Ikawa H. see Matsumoto M. 5939
Ikawa H. see Matsumoto M. 8191

Ikeda A. Akao K. Harada T. and Shinkai S.
Regioselective intramolecular-bridging of calix[8]arenes: unexpected isolation of a doubly-bridged unimolecular capsule-like compound 1621
Ikeda A. Fukuhara C. and Shinkai S.
Fullerene (C_{60})-Ag^+ interactions which induce a solution color change 7091
Ikeda A. see Araki K. 73
Ikeda H. Minegishi T. Takahashi Y. and Miyashi T.
Phenyl substitution effects on rate acceleration of cation radical deazetation of 2,3-diazabicyclo[2.2.2]oct-2-enes 4377
Ikeda H. see Takahashi Y. 1841
Ikeda H. see Takahashi Y. 5547
Ikeda I. see Zhang W. 4545
Ikeda I. see Zhang W. 7995
Ikeda M. see Abe M. 5901
Ikegami S. see Iimori T. 2267
Ikegami S. see Iimori T. 649
Ikegami S. see Ohta S. 2265
Ikegami S. see Ohta S. 7765
Ikeler T. J. see Kukkola P. J. 5065
Ikeno M. see Ishikawa T. 4393
Ikoma K. see Mori H. 7771
Ila H. see Gupta A. K. 2817
Ila H. see Satyanarayana J. 3565
Imai K. see Oriyama T. 8543
Imai N. see Ito H. 1795
Imai N. see Ito H. 1799
Imai R. see Kita Y. 1817
Imajo S. see Iida K. 4997
Imamoto T. Asakura K. Tsuruta H. Kishikawa K. and Yamaguchi K.
Syntheses and properties of trifluoromethanesulfonyloxy derivatives of tricyclohexylphosphine–borane 503
Imamura M. and Hashimoto H.
Synthesis of novel CMP–NeuNAc analogues having a glycosyl phosphonate structure 1451
Imbach J.-L. see Lazrek H. B. 4701
Imbach J.-L. see Peyrottes S. 5869
Imogaï H. Petit Y. and Larchevêque M.
Stereocontrolled synthesis of α,α-disubstituted α-aminoaldehydes and α-aminoacids using a [3,3] allylic trichloracetimidate rearrangement 2573
Imperiali B. see Shrader W. D. 599
Imperiali B. see Sinha Roy R. 2129
Inakuma M. see Tso T. S. C. 9249
Inami K. Kurome T. Takesako K. Kato I. and Shiba T.
Site-specific ring opening of depsipeptide aureobasidin A in hydrogen fluoride 2043
Inamura S. see Toshima H. 5707
Ingold K. U. see Banks J. T. 8059
Ingold K. U. see Snelgrove D. W. 823
Ingrosso G. see Bellucci G. 9089
Ini S. see Gross Z. 7325
Inokoshi J. see Shiomi K. 1265
Inoue H. see Itoh T. 5001
Inoue H. see Kubo K. 5917
Inoue H. see Mizuno K. 2975
Inoue H. see Mizuno K. 7775
Inoue M. Takenaka H. Tsurushima T. Miyagawa H. and Ueno T.
Colletofragarones A1 and A2, novel germination self-inhibitors from the fungus *Colletotrichum fragariae* 5731
Inoue M. Takenaka H. Tsurushima T. Miyagawa H. and Ueno T.
Corrigendum 8823
Inoue R. Shinokubo H. and Oshima K.
Dialkylation of *gem*-dibromocyclopropanes with trialkylmanganate and manganese(II) chloride-catalyzed reaction with alkylmagnesium bromide 5377
Inoue T. see Nishide K. 2271
Inoue Y. see Oi S. 6351
Inui T. see Nishiuchi Y. 7529
Ioffe S. L. see Churakov A. M. 8577
Ionescu D. Silverton J. V. Dickinson L. C. and Miller B.
Stereochemistry and mechanisms of thermal cycloaddition reactions of conjugated enynes. The stereospecific formation of six tetrahedral centers in a single reaction 1559
Ionescu D. see Wenschuh H. 5483
Iqbal J. see Bhatia B. 7311
Iqbal J. see Khanna V. 3367
Iqbal J. see Mandal A. K. 3769
Iqbal J. see Rajesh S. 7315
Iradier F. see Aceña J. L. 105
Irie H. see Hatakeyama S. 4047
Irie H. see Hatakeyama S. 4287
Irie O. Fujiwara Y. Nemoto H. and Shishido K.
An enantioselective total synthesis of (+)-cassiol 9229
Irie R. see Hamachi K. 4979
Irie R. see Noguchi Y. 4533
Irngartinger H. and Weber A.
Twofold cycloaddition of [60]fullerene to a bifunctional nitrile oxide 4137
Iseki K. Kuroki Y. Takahashi M. and Kobayashi Y.
Asymmetric allylation of aldehydes catalyzed by substoichiometric amounts of chiral phosphoramides 5149
Iseki K. Oishi S. Sasai H. and Shibasaki M.
Catalytic asymmetric nitroaldol reaction of α,α-difluoro aldehydes mediated by rare earth–lithium–BINOL complexes 9081
Ishibashi M. see Kobayashi J. 1449
Ishibashi M. see Kobayashi J. 6775
Ishibashi T. Ochifuji N. and Mori M.
New lactone synthesis using a chromium carbene complex 6165
Ishibashi Y. Ohba S. Nishiyama S. and Yamamura S.
Total synthesis of phenoxan and a related pyrone derivative 2997
Ishida A. see Hatanaka M. 401
Ishida K. Matsuda H. Murakami M. and Yamaguchi K.
The absolute stereochemistry of micropeptin 90 9225
Ishida N. see Nishigaichi Y. 3701
Ishida T. see Komori A. 4031
Ishido Y. see Sekine T. 7757
Ishido Y. see Sugiyama H. 1805
Ishifune M. see Kashimura S. 6737
Ishigaki K. see Shibuya M. 865
Ishiguro M. see Iida K. 4997
Ishiguro Y. see Kawagishi H. 7399
Ishihara T. see Yamanaka H. 1829
Ishii Y. Kato S. Iwahama T. and Sakaguchi S.
Hydroxylation of polycyclic alkanes with molecular oxygen catalyzed by *N*-hydroxyphthalimide (NHPI) combined with transition metal salts 4993
Ishii Y. see Saitoh M. 6733
Ishii Y. see Shiraishi H. 7291
Ishii Y. see Ueki M. 4953
Ishikawa T. Ikeno M. Sakamaki T. Sato K. and Higuchi K.
Photo-sensitized oxygenation of phenethylguanidoxime: a possible chemical model for the biological oxidation of N^{ω}-hydroxy-L-arginine to L-citrulline 4393
Ishikawa T. see Futaki S. 201
Ishikuri S. see Jiao Y. 1039
Ishitani H. and Kobayashi S.
Catalytic asymmetric aza Diels–Alder reactions using a chiral lanthanide Lewis acid.

Enantioselective synthesis of tetrahydroquinoline derivatives using a catalytic amount of a chiral source 7357
Ishitani H. see Kobayashi S. 3731
Ishiyama T. Ahiko T. and Miyaura N. A synthesis of allylboronates via the palladium(0)-catalyzed cross-coupling reaction of bis(pinacolato)diboron with allylic acetates 6889
Ishiyama T. see Hori H. 2785
Ishizuka T. see Hashimoto N. 9237
Islam K. see Seneci P. 6319
Islam Md. S. Kawano T. Hatanaka M. and Ueda I. Cyclopent-2-en-1-ones from [3 + 2]-annulation of 3-ethoxycarbonyl-2-propenylidene(triphenyl)phosphorane and glyoxals: synthesis of *cis*-jasmone 5735
Isobe M. see Bamba M. 8199
Isoe S. see Gao W. 7071
Isoe S. see Mori H. 7771
Isoe S. see Shimano K. 2253
Isomura M. see Matsuo I. 8795
Itagaki Y. see Shinada T. 7099
Ito A. Konishi K. and Aida T. Free bases of chiral N-substituted porphyrins as catalysts for asymmetric reaction 2585
Ito H. Imai N. Takao K. and Kobayashi S. Enantioselective synthesis of curacin A—II. Total synthesis of curacin A by condensation of C1–C7, C8–C17, and C18–C22 segments 1799
Ito H. Imai N. Tanikawa S. and Kobayashi S. Enantioselective synthesis of curacin A—I. Construction of C1–C7, C8– C17, and C18–C22 segments 1795
Ito H. see Hojo M. 9241
Ito H. see Miura K. 8539
Ito H. see Miura K. 9059
Ito K. Izawa S. Ohba T. Ohba Y. and Sone T. Syntheses of *p-tert*-butyloxocalix[4]-, [5]-, and [6]arenes and their behavior in solution 5959
Ito M. see Tokitoh N. 5145
Itô S. see Tsunoda T. 2457
Itô S. see Tsunoda T. 2459
Itô S. see Tsunoda T. 2463
Ito T. see Ueoka R. 3461
Ito Y. see Kanie O. 4551
Ito Y. see Murakami M. 7541
Ito Y. see Suginome M. 8887
Ito Y. see Takahashi Y. 5547
Itoh A. see Masaki Y. 9321
Itoh D. see Miura K. 8539
Itoh E. see Katoh T. 3471
Itoh E. see Yoshino T. 3475
Itoh K. see Yano M. 9207
Itoh M. see Ueki Y. 5719
Itoh T. Matsuya Y. Nagata K. and Ohsawa A. Reductive deamination of aromatic amines with nitric oxide (NO) 4165
Itoh T. Shiromoto M. Inoue H. Hamada H. and Nakamura K. Simple preparation of optically pure bis(trifluoromethyl)alkane-diols through lipase-catalyzed reaction 5001
Itoh T. Uzu A. Kanda N. and Takagi Y. Preparation of 3-alkyl-4-hydroxy-2-butenyl acetate through highly regioselective lipase-catalyzed hydrolysis of corresponding diacetates 91
Itoh T. see Nakamura K. 5727
Itoh T. see Suenaga K. 6771
Itoh T. see Takagi Y. 4991
Itokawa H. see Takano I. 7053
Iverson B. see Lamture J. B. 6483
Iwahama T. see Ishii Y. 4993
Iwai Y. see Shiomi K. 1265
Iwama T. see Kataoka T. 2257
Iwanami T. see Suginome M. 8887
Iwane K. see Fukui K. 4983
Iwasa S. see Dufour C. 7867
Iwasaki S. see Onoda T. 4397
Iwasaki S. see Sawada T. 885
Iwasaki T. see Yamanaka T. 4967
Iwasaki Y. Shimizu M. Hirosawa T. and Yamada S. Regioselective synthesis of 19-fluorovitamin D via fluorination of vitamin D–sulfur dioxide adducts 6753
Iwase K. see Mori Y. 2605
Iwase K. see Mori Y. 6959
Iwata C. see Takemoto Y. 3345
Iwata C. see Tanaka T. 7809
Iyanar K. see Murray R. W. 805
Iyengar R. see Engler T. A. 327
Iyer R. P. Devlin T. Habus I. Ho N.-H. Yu D. and Agrawal S. *N*-Pent-4-enoyl nucleosides: application in the synthesis of support-bound and free oligonucleotide analogs by the *H*-phosphonate approach 1539
Iyer R. P. Devlin T. Habus I. Yu D. Johnson S. and Agrawal S. Oligonucleoside phosphoramidates from *N*-pent-4-enoyl nucleoside *H*-phosphonates 1543
Iyoda M. Sasaki S. Sultana F. Yoshida M. Kuwatani Y. and Nagase S. Mono- and dianion of benzoquinone-linked [60]fullerene 7987
Izawa S. see Ito K. 5959
Izumi M. Tsuruta O. Hashimoto H. and Yazawa S. Synthesis of 5-thio-L-fucose-containing blood group antigens H-type 2 and Lewis X (Le^x) 1809
Izzo I. De Riccardis F. Massa A. and Sodano G. Synthesis of incrustasterols, two cytotoxic polyoxygenated sponge steroids 4775
Jaber M. R. see Linderman R. J. 6649
Jablonski A. see Brown T. 5413
Jackson R. F. W. see Ambroise L. 2311
Jacobi D. and Abraham W. Generation of aryltropylium ions by photoinduced and thermal electron transfer 7493
Jacobi D. see Bildstein S. 4941
Jacobi D. see Bildstein S. 8759
Jacobi P. A. Guo J. Hauck S. I. and Leung S. H. An improved synthesis of the C,D-ring pyrromethenone of phytochrome and phytochromobilin 6069
Jacobi P. A. and Herradura P. Enantioselective syntheses of (+)- and (–)-phaseolinic acid 8297
Jacobs H. see Henry G. E. 8663
Jacobs H. K. see Gonzales S. S. 6827
Jacobs M. F. see Paterson I. 8803
Jacobs P. A. see Sels B. F. 8557
Jacobsen E. J. see Romero A. G. 2361
Jacobsen E. N. see Schaus S. E. 7937
Jacobson I. C. and Reddy G. P. Asymmetric reactions of chiral imide enolates with α-keto esters 8263
Jacquesy J.-C. see Martin A. 2967
Jacquesy J.-C. see Martin A. 7731
Jacquesy J.-C. see Martin A. 7735
Jadhav P. K. and Man H.-W. Synthesis of 7-membered cyclic oxamides: novel HIV-1 protease inhibitors 1153
Jaganadham M. V. see Ranganathan S. 5199
Jahng W.-J. see Berkowitz D. B. 4309
Jaime C. see Clapés P. 417
Jain M. L. see Hwu J. R. 2035
Jain S. see Bhatia B. 7311
Jaivisuthunza W. Tarnchompoo B. Thebtaranonth C. and Thebtaranonth Y.

Cyclisation versus acyl migration of α-allyl lactone derived anion: synthesis of spiro[4,5]dec-2-ene-1,6-diones 3199
Jakuboski T. L. see South M. S. 1351
Jakupovic J. see Appendino G. 727
Jakupovic J. see Appendino G. 7837
James B. see Lipshutz B. H. 8471
James I. W. see Ede N. J. 9097
Jamoneau P. see Viaud M.-C. 2409
Janda K. D. see Jung K. W. 6491
Janda K. D. see Sakurai M. 5479
Jang D. O.
Hypophosphorous acid mediated dehalogenation in water 5367
Jang W. B. see Sung J. W. 7537
Jankowski P. see Achmatowicz B. 5589
Janzen E. G. see Sankuratri N. 5313
Jao E. Cooper A. B. Rane D. F. Saksena A. K. Desai J. Wang J. Girijavallabhan V. M. and Ganguly A. K.
Total synthesis of the antifungal cyclic depsipeptides Sch 57697 and aureobasidin A 5661
Jaouen G. see Blanalt S. 6561
Jarosz S.
Application of tri-*n*-butyltin cuprate in sugar chemistry 3063
Jarret R. M. see Herrick R. S. 5289
Jaspers H. C. M. see Devadder S. 703
Jaszberenyi J. Cs. see Mikló K. 3491
Jaworski J. S. and Leszczynski P.
Rate constants for the solution and electrode electron-transfer to substituted bromobenzenes in DMF 3553
Jayaraman M. see Bose A. K. 6989
Jeffery T. see Darses S. 3857
Jefford C. W. Bernardinelli G. Tanaka J. and Higa T.
Structures and absolute configurations of the marine toxins, latrunculin A and laulimalide 159
Jeges G. see Skoda-Földes R. 2085
Jen A. K.-Y. see Shu C.-F. 7055
Jenkins H. D. B. see Baxter S. J. 4617
Jenkins I. D. see Grice I. D. 1087
Jenkins K. see Caddick S. 1301
Jenner G.
High pressure and lanthanide catalyzed synthesis of enamino compounds 3691
Jenner G. and Papadopoulos M.
Influence de la pression dans les réactions entre les cycloalcènes et le propynoate de méthyle catalysées par $AlCl_3$. Etude mécanistique 1417
Jenneskens L. W. see Sarobe M. 1121
Jensen P. R. see Lindel T. 1327
Jeon S. L. see Jeong I. H. 7665
Jeon S. L. see Jeong I. H. 5905
Jeong I. H. Won D. H. and Jeon S. L.
Corrigendum 7665
Jeong I.-Y. see Nagao Y. 393
Jeong I. H. Won D. H. and Jeon S. L.
A new method for the preparation of perfluoroalkylated triphenylethylene derivatives 5905
Jeong I. H. see Kim K. S. 1249
Jeong K.-S. Park J. W. and Cho Y. L.
Molecular recognition of dicarboxylate ions by bis-phenylureas derived from a new dicarboxylic acid 2795
Jeong L. S. and Marquez V. E.
Use of a cyclic sulfite as an epoxide surrogate in the regioselective synthesis of a carbocyclic ring-enlarged 4',1'a-methano oxetanocin analogue 2353
Jessop P. G. see Xiao J. 2813
Jew S.-S. see Lee N. 2429
Jia Z. see Guo D. 6823
Jia Z. J. see Enholm E. J. 1177
Jiaang W.-T. see Tsai Y.-M. 7767
Jiang Q. Van Plew D. Murtuza S. and Zhang X.
Synthesis of (1*R*,1*R*')-2,6-bis[1-(diphenylphosphino)-ethyl]pyridine and its application in asymmetric transfer hydrogenation 797
Jiang X. see Zeng X. 3009
Jiang Y.-Z. see Yang T.-K. 4537
Jiang Z. see Creary X. 579
Jiao Y. Yoshihara T. Ishikuri S. Uchino H. and Ichihara A.
Structural identification of cepaciamide A, a novel fungitoxic compound from *Pseudomonas cepacia* D-202 1039
Jicsinszky L. see Sallas F. 4011
Jiménez J.-M. see Bennasar M.-L. 7653
Jiménez J.-M. see Bennasar M.-L. 9105
Jimenez L. S. see Wang Z. 6049
Jiménez-Barbero J. see Espinosa J.-F. 1467
Jin D. and Mendenhall G. D.
Ring-nitrosation of a secondary aromatic amine, 1,3,5-tris(phenylamino) benzene 4881
Jin M.-J. Ahn S.-J. and Lee K.-S.
New chiral catalysts for the highly enantioselective addition of diethylzinc to aldehydes 8767
Jin Y. Biancotto G. and Just G.
A stereoselective synthesis of dinucleotide phosphoro-thioates, using chiral phosphoramidites as intermediates 973
Jin Z. Kim S. H. and Fuchs P. L.
Phosphazene base P_2–Et mediated isomerization of vinyl sulfones to allyl sulfones 5247
Jin Z. and Fuchs P. L.
Use of phosphazene base and phase-transfer conditions for regiospecific alkylative isomerization of vinyl sulfones capable of undergoing β-elimin-ation reactions 5249
Jin Z. and Fuchs P. L.
Palladium[0]-mediated aminospirocyclization of tertiary allylic sulfones. Stereospecific construction of the azabicyclic ring system of cephalotaxine 5253
Johansson A. Olsson T. and Bergström G.
A short and selective synthesis of (*S*)-geranylcitronellol via conjugate addition of a functionalized copper reagent to 2-substituted *exo*-bornyl crotonates 7127
Johnson D. A. and Taubner L. M.
Efficient method for the *t*-butyldimethylsilylation of alcohols with *N,O*-bis(*t*-butyldimethylsilyl)acetamide 605
Johnson D. A. see Sowell C. G. 609
Johnson F. see Varaprasad C. V. 9
Johnson J. S. see Kingery-Wood J. 3975
Johnson L. N. see Blériot Y. 7155
Johnson M. R. see Pascal, Jr R. A. 8125

Johnson R. L. see Khalil E. M. 3441
Johnson R. P. see Hernandez S. 4907
Johnson S. see Iyer R. P. 1543
Johnston L. see Zhang Z. 4861
Joll C. A. see Giles R. G. F. 7851
Jonczyk A. and Kaczmarczyk G. A new approach to synthesis of *gem*-difluorocyclopropanes substituted with electron withdrawing group 4085
Jonczyk A. and Kaczmarczyk G. Corrigendum 5627
Jonczyk A. and Pakulski Z. Direct vinylation of 2-substituted *N*-(benzylidene)-glycinonitriles under basic conditions 8909
Jones A. B. see Acton, III J. J. 4319
Jones D. E. see Harmata M. 6267
Jones D. E. see Harmata M. 783
Jones G. B. Huber R. S. Mathews J. E. and Li A. Target directed enediyne prodrugs: cytotoxic estrogen conjugates 3643
Jones K. and Fiumana A. Pyridine radicals in synthesis: a formal total synthesis of (±)-oxerine 8049
Jones M. G. see Bell A. A. 8561
Jones M. G. see Davis B. 8565
Jones M. G. see Griffiths R. C. 3207
Jones M. G. see Shilvock J. P. 8569
Jones P. G. see Galley G. 6307
Jones R. A. see Zhang X. 3789
Jones R. C. F. Howard K. J. and Snaith J. S. Cycloaddition of homochiral imidazolinium ylides: a route to optically active pyrroloimidazoles 1707
Jones R. C. F. Howard K. J. and Snaith J. S. An enantioselective route to pyrrolidines: removal of the chiral template from homochiral pyrroloimidazoles 1711
Jones R. C. F. see Crombie L. 9255
Jones R. V. H. see Bell L. 7139
Jones R. V. H. see Eames J. 1117
Jones R. V. H. see Eames J. 4581
Jones R. V. H. see Eames J. 4823
Jones R. V. H. see Eames J. 707
Jones, Jr M. see Atkins J. H. 7217
Jones, Jr M. see Barnett-Thamattoor L. 7221
Jones, Jr M. see Krasutsky P. A. 5673
Jones, Jr M. see Thamattoor D. M. 8333
Jorge A. see Urones J. G. 1659
Jørgensen M. see Bols M. 2097
Joseph B. see Superchi S. 6057
Joseph B. see Superchi S. 6061
Joseph S. P. see Comins D. L. 793
Joseph S. P. see Comins D. L. 9275
Joseph-Nathan P. Meléndez-Rodríguez M. Cerda-García-Rojas C. M. and Catalán C. A. N. Photochemical rearrangements of highly functionalized longipinene derivatives 8093
Jouannetaud M.-P. see Martin A. 2967
Jouannetaud M.-P. see Martin A. 7731
Jouannetaud M.-P. see Martin A. 7735
Jouanno C. see Wendeborn S. 5511
Jouen C. Lasne M. C. and Pommelet J. C. Synthesis of α-fluorinated-α,α-difunctionalized sulfides and sulfones 2413
Jouin P. see Galéotti N. 3997
Joule J. A. see Cooper M. M. 4283
Joule J. A. see Roberts D. 1509
Joullié M. M. see Ramanjulu J. M. 311
Journet M. see Kende A. S. 6295
Juarros L. E. see Gonzales S. S. 6827
Jubault M. see Leriche P. 5115
Jubault M. see Leriche P. 8861
Jubault P. Feasson C. and Collignon N. One-pot and efficient electrosynthesis of cycloalkylphosphonates from diisopropyl trichloromethylphosphonate using magnesium electrochemical activation 3679
Julien J. see Khanna I. K. 1355
Jun K. see Park K. H. 8869
Jung B. Kim H. and Park B. S. Photodecarbonylation of 2-phenyl-4-alkylidene-5(4*H*)-oxazolones 4019
Jung K. W. Zhao X. and Janda K. D. A linker that allows efficient formation of aliphatic C–H bonds on polymeric supports 6491
Jung M. E. Cho Y. M. and Jung Y. H. Facile synthesis of optically active 2-hydroxymethyl-4-methylene-cyclohexanol. *De novo* synthesis of dideoxycarbocyclic sugars 3
Jung M. E. and Lazarova T. I. Preparation of (phenylsulfinyl)phenols from aryl phenylsulfinates: 'thia-Fries rearrangement' 7
Jung M. E. and Nichols C. J. Highly stereoselective synthesis of *trans,trans*-4-aryl-2,3-oxetanedimethanols: preparation of oxetanocin A analogues 7667
Jung M. E. and Vu B. T. Substituent effects on intramolecular dipolar cycloadditions: the *gem*-dicarboalkoxy effect 451
Jung M. E. see McGee D. P. C. 1995
Jung W.-H. see Yu C.-M. 7095
Jung Y. H. see Jung M. E. 3
Jungmann O. and Pfleiderer W. A new efficient method in nucleoside synthesis 8355
Junjappa H. see Gupta A. K. 2817
Junjappa H. see Satyanarayana J. 3565
Junk T. and Catallo W. J. Preparative supercritical deuterium exchange in arenes and heteroarenes 3445
Junk T. and Fronczek F. R. Photostimulated telluromethylation 4361
Jurka J. see Burgess L. E. 3255
Jursic B. S. Timberlake J. W. and Engel P. S. Computation of bond dissociation energies of substituted methanes with density functional theory 6473
Just G. see Jin Y. 973
Just G. see Marsault E. 977
Just G. see Xin Z. 969
Juteau H. see Charette A. B. 7925
Jüttner F. see Hagmann L. 6539
Jyojima T. see Toshima K. 1069
Jyojima T. see Toshima K. 1073

Kabalka G. W. Narayana C. and Reddy N. K. Stereoselective synthesis of *anti*-1,3-diols via allylboration 2181
Kabat M. M. A novel route to 2-fluoromethyl- and 2-hydroxymethyl-4-alkyl furans via allene oxides 7437
Kacharov A. D. see Soloshonok V. A. 7845

Kache R. see Yadav J. S. 6603
Kaczmarczyk G. see Jonczyk A. 4085
Kaczmarczyk G. see Jonczyk A. 5627
Kádas I. see Mikló K. 3491
Kadota I. Hatakeyama D. Seki K. and Yamamoto Y. Intramolecular reaction of oxo-substituted allenyl- and propargylstannane with aldehyde 3059
Kadota I. Kawada M. Saya S. and Yamamoto Y. Novel route to the synthesis of hydroxylated piperidine and pyrrolidine derivatives via the intramolecular reaction of γ-aminoallylstannane with aldehyde 2109
Kadota I. Sakaihara T. and Yamamoto Y. A general and efficient method for the preparation of γ-alkoxyallylstannanes via an acetal cleavage 3195
Kadota S. Prasain J. K. Li J. X. Basnet P. Dong H. Tani T. and Namba T. Blepharocalyxins A and B, novel diarylheptanoids from *Alpinia blepharocalyx*, and their inhibitory effect on NO formation in murine macrophages 7283
Kadow J. F. see Kant J. 6495
Kadow J. F. see Mastalerz H. 8683
Kadow J. F. see Mastalerz H. 8687
Kadowaki Y. see Satake M. 5955
Kagamizono T. see Sodeoka M. 8775
Kagawa T. see Oikawa H. 6169
Kagechika H. see Azumaya I. 5003
Kahl S. B. see Radel P. A. 6623
Kahn M. see Qabar M. N. 965
Kahraman M. see Harmata M. 6267
Kahrs B. C. see Hoffmann R. W. 4479
Kai S. and Suzuki M. Formation of novel spiro-chlorin and allylidenechlorin by the reaction of bromovinyl-porphyrin with tetracyano-ethylene 5931
Kaiser T. Nicholson G. J. Kohlbau H. J. and Voelter W. Racemization studies of Fmoc-Cys(Trt)-OH during stepwise Fmoc-solid phase peptide synthesis 1187
Kaji E. see Konda Y. 4015
Kajii Y. see Mutai K. 505
Kajimoto T. see Shibata K. 2791
Kajiyama K. Kojima S. and Akiba K. Synthesis and characterization of intra- and intermolecular hydrogen bonding isomers of P–H (apical) phosphoranes bearing a hydroxyl group and their thermal cyclization 8409
Kakegawa H. see Nagao Y. 861
Kakinuma K. see Kishida M. 2061
Kaldor S. W. Siegel M. G. Fritz J. E. Dressman B. A. and Hahn P. J. Use of solid supported nucleophiles and electrophiles for the purification of non-peptide small molecule libraries 7193
Kaldor S. W. see Dressman B. A. 937
Kalesse M. and Eh M. Enantioselective synthesis of the C1–C9 segment of bryostatin by kinetic resolution of racemic β-keto esters 1767
Kaliappan K. and Subba Rao G. S. R. An expedient route to the preparation of key intermediates for the total synthesis of aphidacolin, stemodin and oryzalexin S 8429
Kalin M. L. see Schwan A. L. 2345
Kalinin A. V. see Doyle M. P. 1371
Kalisch W. W. and Senge M. O. Synthesis and structural characterization of nonplanar tetraphenylporphyrins with graded degree of β-ethyl substitution 1183
Kaliya O. L. see Barkanova S. V. 1637
Kaljuste K. and Undén A. Solid-phase synthesis of peptide aminoalkylamides using an allyl linker 3031
Kalkote U. R. Sathe V. T. Kharul R. K. Chavan S. P. and Ravindranathan T. Quinolone antibiotics: study of reactivity and impurity profile of piperazine with chloro-fluoro-quinolone carboxylic acid in aqueous medium 6785
Kaller A. M. see Piers E. 5857
Kallmerten J. see Sin N. 5645
Kam S. M. see Rosenberg M. G. 3235
Kam T.-S. Yoganathan K. Koyano T. and Komiyama K. Pauciflorines A and B, novel melanin biosynthesis inhibitors from *Kopsia* 5765
Kam T.-S. Yoganathan K. and Li H.-Y. Tenuisines A, B and C, novel bisindoles with C_2 symmetry from *Kopsia tenuis* 8811
Kam T.-S. Yoganathan K. and Wei C. Paucidactine A and B, new indole alkaloids with a novel ring system containing a lactone moiety 3603
Kamal A. Reddy B. S. P. and Reddy B. S. N. A new facile procedure for the preparation of pyrrolo[2,1-c][1,4]benzodiazepines: synthesis of the antibiotic DC-81 and its thio analogue 2281
Kamal A. Reddy B. S. P. and Reddy B. S. N. Synthesis of pyrrolo[2,1-c][1,4]benzodiazepine antibiotics via azido reductive cyclization with HMDST 6803
Kamal A. and Gayatri N. L. An efficient method for 4β-anilino-4'-demethylepipo-dophyllotoxins: synthesis of NPF and W-68 3359
Kamal M. see Winum J.-Y. 1781
Kamat S. K. see Chavan S. P. 7827
Kamata M. Nagai S. Kato M. and Hasegawa E. Pyrylium salt promoted substitution reactions of acetals with various silylated nucleophiles 7779
Kamata M. Tanaka T. and Kato M. Novel photo-fragmentation of 3,3,6,6-tetra(*p*-methoxy-phenyl)-1,2-dioxane through a C–O bond cleaved 1,6-diradical intermediate 8181
Kamata M. Yokoyama Y. Karasawa N. Kato M. and Hasegawa E. Aminium salt promoted catalytic substitution reactions of acetals with silylated nucleophiles 3483
Kambe N. see Terao J. 4741
Kamijo S. see Meguro M. 7453
Kamikawa K. and Uemura M. Diastereoselective synthesis of axially chiral biaryls via nucleophilic addition to (arene)chromium complexes with Grignard reagents 6359
Kamikawa T. Uozumi Y. and Hayashi T. Enantioposition-selective alkynylation of biaryl ditriflates by palladium-catalyzed asymmetric cross-coupling 3161
Kamikubo T. Hiroya K. and Ogasawara K. Stereo- and enantio-controlled synthesis of two naturally occurring polyoxygenated cyclohexenemethanols, (+)-epiepoxydon and (–)-phyllostine, via catalytic asymmetrization of a *meso* substrate 499

Kamiyama H. see Morita H. 3739
Kamiyama N. see Shuto S. 641
Kamo O. see Chou T. 4023
Kan Y. see Kouda K. 4541
Kan Y. see Takahashi H. 7087
Kan Y. see Toyota M. 4745
Kanai M. see Nakagawa Y. 7805
Kanaoka Y. see Yamamoto Y. 7801
Kanda A. see Tanaka T. 7809
Kanda N. see Itoh T. 91
Kanda Y. see Konoike T. 3339
Kaneda K. and Yamashita T. Heterogeneous Baeyer–Villiger oxidation of ketones using *m*-chloroperbenzoic acid catalyzed by hydrotalcites 4555
Kaneko C. see Katagiri N. 1801
Kaneko C. see Sato M. 633
Kaneko C. see Toyota A. 8507
Kaneko J. see Tsukahara K. 3149
Kanemasa S. Yamamoto H. and Kobayashi S. *dl*-Selective reductive coupling/Dieckmann condensation sequence of α,β-unsaturated amides with samarium(II) iodide/HMPA. Synthesis of a new ligand, *trans*-1,2-cyclopentanediyl-2,2'-biphenol 8505
Kanemoto N. see Matsumura Y. 8395
Kaneta N. Mitamura F. Uemura M. Murata Y. and Komatsu K. Electronic interaction of tricarbonylchromium-complexed benzene with a facing aryl ring in the 1,8-diarylnaphthalene system 5385
Kang H. and Fenical W. Polycarpine dihydrochloride: a cytotoxic dimeric disulfide alkaloid from the Indian Ocean ascidian *Polycarpa clavata* 2369
Kang H.-Y. Lee S. H. Choi K. I. and Koh H. Y. Synthesis of cephalosporin derivatives utilizing the cephem triflate—I. Introduction of 3-position substituents via a cycloaddition–fragmentation route 7549
Kang J. H. see Oh C. H. 8875
Kang K.-H. see Ha H.-J. 7069
Kang S.-K. Lee H.-W. Kim J.-S. and Choi S.-C. Palladium-catalyzed cross-coupling of organostannanes with iodanes 3723
Kang S. B. Ahn E. J. Kim Y. and Kim Y. H. A facile synthesis of (*S*)-(−)-7,8-difluoro-3,4-dihydro-3-methyl-2*H*-1,4-benzoxazine by zinc chloride assisted Mitsunobu cyclization reaction 9317
Kanger T. see Lopp M. 7583
Kanie O. Ito Y. and Ogawa T. Orthogonal glycosylation strategy in synthesis of extended blood group B determinant 4551
Kano K. see Ramesh U. 8403
Kant J. Schwartz W. S. Fairchild C. Gao Q. Huang S. Long B. H. Kadow J. F. Langley D. R. Farina V. and Vyas D. Diastereoselective addition of Grignard reagents to azetidine-2,3-dione: synthesis of novel Taxol® analogues 6495
Kapfer I. Lewis N. J. Macdonald G. and Taylor R. J. K. The synthesis of novel analogues of the manumycin family of antibiotics and the antitumour antibiotic LL-C10037α 2101
Kapfer I. see Alcaraz L. 6619
Kapon M. see Gross Z. 7325
Kapoor M. see Gupta S. C. 8913
Kaprinidis N. A. and Turro N. J. Photosensitized defluorination of saturated perfluorocarbons 2373
Karady S. Amato J. S. Reamer R. A. and Weinstock L. M. Annelation of aromatic oxo compounds 8277
Karasawa N. see Kamata M. 3483
Karinen K. see Lounasmaa M. 1513
Karlström A. and Undén A. A new protecting group for aspartic acid that minimizes piperidine-catalyzed aspartimide formation in Fmoc solid phase peptide synthesis 4243
Karpa M. J. see Riggs J. A. 6303
Kartha K. P. R. Aloui M. and Field R. A. Iodine: a versatile reagent in carbohydrate chemistry—II. Efficient chemospecific activation of thiomethyl-glycosides 5175
Kartha K. P. R. Aloui M. and Field R. A. Iodine: a versatile reagent in carbohydrate chemistry—III. Efficient activation of glycosyl halides in combination with DDQ 8807
Karunaratne V. and Dolphin D. Oxidation of substituted 2-methylpyrroles with perhalogenated metalloporphyrins: a one-pot synthesis of dipyrromethanes 603
Kasal A. Chodounska H. and Szczepek W. J. *trans* Hydrindanes by dimide reduction: synthesis of dihydro-B-nortestosterone and its 17α-methyl derivative 6221
Kasatkin A. Kobayashi K. Okamoto S. and Sato F. Synthesis of 1-hydroxybicyclo-[*n*.1.0]alkanes (*n* = 3 and 4) and their silyl ethers from olefinic esters via tandem intramolecular nucleophilic acyl substitution and intramolecular carbonyl addition reactions mediated by Ti(OPr-*i*)$_4$/2 *i*-PrMgCl reagent 1849
Kasatkin A. Kobayashi K. Okamoto S. and Sato F. Erratum 6960
Kasch H. A novel highly effective and stereoselective epoxidation of allylic and homoallylic alcohols using chloral hydrate and hydrogen peroxide 8349
Kashimura S. Ishifune M. Murai Y. and Shono T. Cathodic coupling of ketones with trimethylsilyl substituted allyl alcohols 6737
Kashiwagi K. see Oi S. 6351
Kashman Y. see Fridkovsky E. 6909
Kassab D. J. see Ponasik J. A. 6041
Kast P. Asif-Ullah M. and Hilvert D. Is chorismate mutase a prototypic entropy trap?—Activation parameters for the *Bacillus subtilis* enzyme 2691
Kastorsky L. P. see Samoshin V. V. 3981
Katagiri N. Okada M. Kaneko C. and Furuya T. Synthesis of chiral cyclic nitrones via a nitrosoketene intermediate and their use for the complete EPC synthesis of nonproteinogenic amino acids 1801
Katagiri T. see Sugimura T. 7303
Katagiri T. see Uneyama K. 2045
Kataoka T. Iwama T. and Takagi A. Selective C–N bond cleavage of 4-silyl-substituted 1,2-thiazetidine 1,1-dioxides with $EtAlCl_2$: stereospecific formation of (*E*)-vinylsulfonamides 2257
Kataoka Y. Makihira I. and Tani K. First preparation of allyl vanadium reagents in a mixed

solvent of THF and HMPA (HMPA = hexamethylphosphoric triamide) and their application to allylation of carbonyl compounds 7083
Katerinopoulos H. E. see Zaponakis G. 3045
Kates S. A. see Kremsky J. N. 4313
Kato H. see Tsukamoto S. 1439
Kato H. see Tsukamoto S. 5555
Kato I. see Inami K. 2043
Kato M. see Hagiwara H. 5139
Kato M. see Kamata M. 3483
Kato M. see Kamata M. 7779
Kato M. see Kamata M. 8181
Kato S. see Ishii Y. 4993
Kato S. see Yamamoto Y. 7801
Kato T. see Hasegawa E. 7079
Katoh T. Itoh E. Yoshino T. and Terashima S.
Total synthesis of natural (+)-FR900482—I. Synthetic and end-game strategies 3471
Katoh T. Yoshino T. Nagata Y. Nakatani S. and Terashima S.
Total synthesis of natural (+)-FR900482—III. Completion of the synthesis 3479
Katoh T. see Ueki Y. 5719
Katoh T. see Yoshino T. 3475
Katritzky A. R. Chen J. and Belyakov S. A.
α-(Benzotriazolyl)methyl phenyl thioethers: convenient reagents for α-phenylthioalkylation of silylated nucleophiles 6631
Katritzky A. R. Levell J. R. and Li J.
A new indole synthesis via [3 + 3] annulation of 2-(benzotriazol-1-ylmethyl)pyrroles with α,β-unsaturated aldehydes and ketones 5641
Katritzky A. R. and Xie L.
para-Formylation of nitroarenes via vicarious nucleophilic substitution of hydrogen with tris(benzotriazol-1-yl)methane 347
Katritzky A. R. see Kobayashi S. 3731
Katsuki T. see Fukuda T. 4389
Katsuki T. see Hamachi K. 4979
Katsuki T. see Nishikori H. 9245
Katsuki T. see Noguchi Y. 4533
Katsumura S. see Mori H. 7771
Katsuyama I. Funabiki K. Matsui M. Muramatsu H. and Shibata K.
An effective synthesis of trifluoromethyl-substituted 1,4-dihydropyridines with phosphorus oxychloride/pyridine adsorbed on silica gel 4177
Katunuma N. see Nagao Y. 861
Kauffman G. S. see Zhang L. 4455
Kaufman S. A. Phanijphand T. and Fry A. J.
Cobalt(salen)-electrocatalyzed conversion of benzotrichloride into tolane. A triply catalytic and overall quintuple electrochemical transformation 8105
Kaufman T. S.
The Mitsunobu reaction of *ortho*-ethers of secondary benzylic alcohols. Concise enantioselective synthesis of a key intermediate of the novel β-adrenergic receptor antagonist MY336-a 5329
Kaufmann D. see Bolm C. 3985
Kaufmann G. see Asfari Z. 3325
Kaur N. see Kumar S. 2071
Kawabata K. see Tobe Y. 9325
Kawabata T. Kuroda A. Nakata E. Takasu K. and Fuji K.
Chiral recognition of amino acid derivatives by 1,1'-binaphthalene-8,8'-diol 4153
Kawada M. see Kadota I. 2109
Kawagishi H. Shimada A. Hosokawa S. Mori H. Sakamoto H. Ishiguro Y. Sakemi S. Bordner J. Kojima N. and Furukawa S.
Erinacines E, F, and G, stimulators of nerve growth factor (NGF)-synthesis, from the mycelia of *Hericium erinaceum* 7399
Kawahama R. see Uenishi J. 6759
Kawahara S. Wada T. and Sekine M.
1:1 and 1:2 complexes of Bu_4NF and $BF_3{\cdot}Et_2O$: unique properties as reagents for cleavage of silyl ethers 509
Kawai M. see Araki S. 8417
Kawai Y. Kunitomo J. and Ohno A.
Geometrical change of a flavoenzyme model through hydrogen bonding to the pyrimidine ring 8905
Kawai Y. see Tanaka K. 5925
Kawakami T. see Shibuya M. 865
Kawamura S. see Hashimoto N. 9237
Kawamura S. see Ushigoe Y. 2093
Kawano T. see Islam Md. S. 5735
Kawasaki I. see Yamashita M. 7755
Kawasaki N. see Kobayashi J. 8203
Kawasaki T. Terashima R. Sakaguchi K. Sekiguchi H. and Sakamoto M.
A short route to "reverse-prenylated" pyrrolo[2,3-*b*]indoles via tandem olefination and Claisen rearrangement of 2-(3,3-dimethylallyloxy)indol-3-ones: first total synthesis of flustramine C 7525
Kawasaki Y. see Shiraishi H. 7291
Kawashima E. see Sekine T. 7757
Kawashima E. see Sugiyama H. 1805
Kawazu K. see Fukuyama Y. 6767
Kay H. A. see Audia J. E. 4121
Kaya K. Sano T. Beattie K. A. and Codd G. A.
Nostocyclin, a novel 3-amino-6-hydroxy-2-piperidone-containing cyclic depsipeptide from the cyanobacterium *Nostoc* sp. 6725
Kaya K. see Kouda K. 6347
Kaya K. see Sano T. 6873
Kazmaier U.
Synthesis of quaternary amino acids containing β,γ- as well as γ,δ-unsat-urated side chains via chelate–enolate Claisen rearrangement 5351
Kazmaier U. see Krebs A. 7945
Keaney M. T. see Curran T. P. 1933
Keating T. A. see Strocker A. M. 1149
Keay B. A. see Passafaro M. S. 429
Keay B. A. see Wilson N. S. 153
Keck G. E. Savin K. A. Weglarz M. A. and Cressman E. N. K.
Synthetic studies on the rhizoxins—II. An approach to the C_{10}–C_{26} subunit using "substrate directed" allylstannane additions to aldehydes 3291
Keeling S. see Dyer J. 4573
Kehler J. Püschl A. and Dahl O.
Solid phase synthesis of oligodeoxynucleoside phosphorodithioates by a phosphotriester method using a chemoselective coupling reagent 8041
Keifer P. A. see Chauret D. C. 7875
Kelkar A. A.
The vinylation of aryl iodides using homogeneous platinum complex catalyst 8917
Keller E. and Feringa B. L.
Ytterbium triflate catalyzed Michael additions of β-ketoesters in water 1879
Keller M. see Mathew T. 4491
Keller T. M. see Son D. Y. 1579
Kellman J. see Kerr R. G. 8301
Kelly M. T. see Gerard J. 7201
Kelly N. M. Reid R. G. Willis C. L. and Winton P. L.

Chemo-enzymatic synthesis of isotopically labelled L-valine, L-isoleucine and *allo*-isoleucine 1517
Kelly-Borges M. see Hooper G. J. 7135
Kempin U. Hennig L. Müller D. Markus A. and Welzel P. A selective reaction that can be used to attach moenomycin to solid supports and proteins 5087
Kende A. S. Journet M. Bali R. G. and Tsou N. N. Diastereoselective triple radical cyclization of a bromomethyldimethylsilyl allyl ether 6295
Kennedy G. Rossi T. and Tamburini B. The use of zinc enolates in the synthesis of a key intermediate for the preparation of trinem antibiotics 7441
Kennedy G. and Perboni A. D. The preparation of heterobiaryl phosphonates via the Stille coupling reaction 7611
Kennedy R. J. see Curran T. P. 1933
Kent D. R. Cody W. L. and Doherty A. M. Two new reagents for the guanylation of primary, secondary and aryl amines 8711
Kenwright A. M. see Byerley A. L. J. 9093
Keppens M. see Kulinkovich O. 1095
Kerhoas L. see Ducrot P.-H. 3121
Kermarrec C. Madiot V. Grée D. Meyer A. and Grée R. A new highly stereoselective monofluorination in benzylic position 5691
Kerr R. G. Lawry J. and Gush K. A. *In vitro* biosynthetic studies of the bryostatins, anti-cancer agents from the marine bryozoan *Bugula neritina* 8305
Kerr R. G. Rodriguez L. C. and Kellman J. A chemoenzymatic synthesis of 9(11)-secosteroids using an enzyme extract of the marine gorgonian *Pseudopterogorgia americana* 8301
Kerremans L. see Andersen M. W. 8147
Kerridge A. see Maddrell S. J. 6001
Kerrigan F. see Boyd E. A. 5425
Keshavaraja A. see Chavan S. P. 233
Keshavaraja A. see Chavan S. P. 237
Kessler H. see Kranz M. 5359
Kessler H. see Mechnich O. 5355
Kessler H. see Michael K. 3453
Kesten S. see Chen H. G. 8129
Ketcha D. M. see Xiao D. 1523
Keys B. A. see Zhao S.-H. 2725
Khadilkar B. M. Gaikar V. G. and Chitnavis A. A. Corrigendum 1719
Khai B. T. and Arcelli A. Stereo- and chemoselective transfer hydrogenation of carbonyl groups with $RuCl_2(PPh_3)_3$ and BINAP-Ru as catalysts and $Et_3NH^+H_2PO_2^-$·1.5H_2O as a hydrogen donor 6599
Khaïder H. see Lazrek H. B. 4701
Khalaf N. K. see Persichetti R. A. 6507
Khalil E. M. Subasinghe N. L. and Johnson R. L. An efficient and high yield method for the *N*-*tert*-butoxycarbonyl protection of sterically hindered amino acids 3441
Khamrai U. K. see Basak A. 2475
Khan J. A. see Bradley E. L. 7329
Khan J. A. see Bradley E. L. 6935
Khan N. M. Arumugam V. and Balasubramanian S. Solid phase reductive alkylation of secondary amines 4819
Khanapure S. P. see Adiyaman M. 4849
Khanapure S. P. see Hwang S.-W. 779
Khanapure S. P. see Shi X.-X. 4331
Khanna I. K. Weier R. M. Julien J. Mueller R. A. Lankin D. C. and Swenton L. The synthesis of 1,5-dideoxy-1,5-(alkyl)imino-2-C-methyl-D-glucitols 1355
Khanna V. Maikap G. C. and Iqbal J. An efficient oxidation of sulfides to sulfones using 2-methylpropanal and dioxygen 3367
Khanna V. see Mandal A. K. 3769
Kharul R. K. see Kalkote U. R. 6785
Khau V. V. and Martinelli M. J. 1,3-Dipolar cycloreversion of a 1,3,4-oxadiazolidine as a controlled azomethine imine surrogate for pyrazolidine synthesis 4323
Khiar N. see Alonso I. 1477
Khim S.-K. Wu X. and Mariano P. S. Stereochemical features of oxidative Mannich cyclizations of vinyl- and allyl-silane containing α-silyl-amines and -amides 571
Khlestkin V. K. Mazhukin D. G. Tikhonov A. Ya. Bagryanskaya I. Yu. Gatilov Y. V. Utepbergenov D. I. Khramtsov V. V. and Volodarsky L. B. Unexpected transformation of 1,2-bis(*N*-methoxy-*N*-nitrosoamino)cycloalkanes: first synthesis of 4,5-dihydro-1,2,3-triazole 2-oxides 5997
Khomich A. N. see Shokova E. A. 543
Khramtsov V. V. see Khlestkin V. K. 5997
Khumtaveeporn K. see Okuro K. 2713
Khuong-Huu F. see Herlem D. 1241
Kiau S. see Schmittel M. 7691
Kiau S. see Schmittel M. 999
Kibayashi C. see Sato M. 9063
Kibayashi C. see Yamada H. 8787
Kibayashi C. see Yamazaki N. 6161
Kida T. see Zhang W. 7995
Kidwell H. see Pelter A. 1273
Kiefel M. J. and von Itzstein M. The first synthesis of an alkylmercury containing *N*-acetylneuraminic acid derivative 7307
Kiessling L. L. see Brüning J. 2907
Kiessling L. L. see Manning D. D. 1953
Kiessling L. L. see Schueller C. M. 8853
Kigoshi H. see Mutou T. 7299
Kigoshi H. see Suenaga K. 5151
Kigoshi H. see Suenaga K. 6771
Kihara H. see Takagi Y. 4991
Kihlberg J. see Broddefalk J. 3011
Kihlberg J. see Elofsson M. 7645
Kihlberg J. see Svensson A. 7649
Kikori Y. see Kobayashi Y. 6125
Kikuchi M. see Machida K. 4157
Kil K.-E. see Ha D.-C. 5723
Kilburn J. D. see Bonnat M. 5409
Kim A. see Oh C. H. 8875
Kim B. H. Chung Y. J. and Ryu E. J. Corrigendum 139
Kim D. Choi W. J. Hong J. Y. Park I. Y. and Kim Y. B.

An asymmetric synthesis of (+)-isonitramine by 'triple allylic strain-controlled' intramolecular S_N2' alkylation 1433
Kim D. see Noh T. 9329
Kim D.-K. see Lee N. 2429
Kim D. Y. Rhie D. Y. and Oh D. Y. Acylation of diethyl (ethoxycarbonyl)fluoromethylphosphonate using magnesium chloride–triethylamine: a facile synthesis of α-fluoro β-keto esters 653
Kim H. see Jung B. 4019
Kim H. see Yang T.-F. 8849
Kim H. Y. and Toogood P. L. A new stereoselective route to (2*S*,3*S*,8*S*,9*S*,4*E*,6*E*)-3-amino-9-methoxy-2,6,8-trimethyl-10-phenyldeca-4,6-dienoic acid (Adda) 2349
Kim I. J. see Mukai C. 5389
Kim J.-M. Bi Y. Paikoff S. J. and Schultz P. G. The solid phase synthesis of oligoureas 5305
Kim J.-M. Wilson T. E. Norman T. C. and Schultz P. G. Synthesis of a cyclic urea as a nonnatural biopolymer scaffold 5309
Kim J.-P. see Koshino H. 4549
Kim J.-P. see Yun B.-S. 8529
Kim J.-S. see Kang S.-K. 3723
Kim J. Y. see Kim K. S. 1249
Kim K. see Chang R. K. 7791
Kim K. see Lee H.-S. 3709
Kim K. see Lee H.-S. 869
Kim K. see Nagao Y. 861
Kim K.-I. and McCarthy J. R. A new route to 1,1-difluoroolefins from carboxylic acids 3223
Kim K. H. see Lee N. 2429
Kim K. M. and Ryu E. K. Unusual iodine catalyzed lactonization of γ-methyl-γ,δ-pentenoic acids: a facile synthesis of γ,γ-dimethyl-γ-butyrolactones 1441
Kim K. S. Park H. B. Kim J. Y. Ahn Y. H. and Jeong I. H. Stereoselective methoxyselenenylation of acyclic allylic alcohol derivatives: a method for the synthesis of 1,3-*anti*-diols 1249
Kim S. and Uh K. H. Thallium ion mediated ring expansion of 1-trimethylsilyloxy-1-alkenylcycloalkanes to α-*exo*-methylenecycloalkanones 3865
Kim S.-H. Hanson M. V. and Rieke R. D. Direct formation of organomanganese bromides using Rieke manganese 2197
Kim S. H. and Fuchs P. L. Conversion of δ-(sulfonyl)amino-α-epoxy ketones to bicyclic ketopyrroles via intramolecular conjugate-addition to azoene intermediates. Synthesis of the bicyclic ketopyrrole core of the 1-azafulvene roseophilin 2545
Kim S. H. see Jin Z. 5247
Kim W. Dannaldson J. Barnes C. L. and Gates K. S. Corrigendum 6425
Kim W. Dannaldson J. and Gates K. S. Reactions of 3*H*-1,2-benzodithiol-3-one 1-oxide with amines and anilines 5337
Kim W.-G. see Koshino H. 4549
Kim W.-G. see Yun B.-S. 8529
Kim W.-S. Sasai H. and Shibasaki M. β-Selective glycosylation with α-mannosyl fluorides using tin(II) triflate and lanthanum perchlorate 7797
Kim Y. see Kang S. B. 9317
Kim Y.-W. see Lee N. 2429
Kim Y. B. see Kim D. 1433
Kim Y. H. and Choi J. Y. Diastereoselective addition of organolithiums to new chiral hydrazones. Enantioselective synthesis of (*R*)-coniine 5543
Kim Y. H. and Choi J. Y. Novel palladium catalyzed dehydrogenation of α-hydrazinonitriles to hydrazonoyl cyanides using cyclopentene. Synthesis of 1*H*-pyrazole-4-carboxylate 8771
Kim Y. H. see Choi J. Y. 7795
Kim Y. H. see Kang S. B. 9317
Kimachi T. see Yamamoto Y. 7801
Kimbaris A. see Gerothanassis I. P. 3191
Kimura K. see Makino K. 9073
Kimura M. see Harayama H. 7287
Kimura T. see Nishiuchi Y. 7529
Kimura Y. Kusano M. Koshino H. Uzawa J. Fujioka S. and Tani K. Penigequinolones A and B, pollen-growth inhibitors produced by *Penicillium* sp., No. 410 4961
Kin H. see Yamamoto Y. 1863
Kincey P. M. see Bell D. 3895
Kindler N. see Fürstner A. 7005
King A. see Chu M. 3943
King A. see Chu M. 7229
King S. B. see Atkinson R. N. 9287
Kingery-Wood J. and Johnson J. S. Resolution of *anti*-3-oxotricyclo[2.2.1.0]heptane-7-carboxylic acid by *Candidia antartica* lipase A 3975
Kini A. M. see Parakka J. P. 8085
Kinnel R. B. see Riccio R. 1979
Kino K. see Sugiyama H. 9067
Kinoshita M. see Hatanaka K. 873
Kinoshita M. see Hatanaka K. 877
Kinoshita M. see Hojo H. 7391
Kinoshita T. see Matsumura Y. 8395
Kinsho T. see Smith, III A. B. 6461
Kinstler O. see Zhang G. 6243
Kira H. see Kiyooka S. 2597
Kira T. see Kiyooka S. 8903
Kirchhoff M. M. see Hernandez S. 4907
Kirihara M. see Momose T. 4987
Kiriyama Y. see Fukuyama Y. 1261
Kirkup M. P. see Shankar B. B. 4095
Kirmse W. Krzossa B. and Steenken S. Biphotonic generation of carbenes and carbocations by laser flash photolysis 1197
Kirschner S. see Marchand A. P. 8101
Kise N. see Yoshida J. 3157
Kishan Reddy Ch. Devasagayaraj A. and Knochel P. Uncatalyzed conjugate additions of diorganozincs in *N*-methylpyrrolidinone 4495
Kishi E. see Hayashi T. 4969
Kishi Y. see Stamos D. P. 8643
Kishi Y. see Stamos D. P. 8647
Kishida M. Eguchi T. and Kakinuma K. Remote asymmetric induction observed in the alkylation of propionate attached to a carbohydrate template 2061
Kishida M. see Masuyama Y. 7103
Kishihara K. see Kobayashi Y. 4385
Kishikawa K. see Imamoto T. 503
Kishikawa K. see Kohmoto S. 7761
Kishikawa K. see Kohmoto S. 8879
Kishino H. see Mikami K. 3705
Kishore R. Identification of novel stereogeometrical features in β-Ala residue 5747
Kita Y. Kitagaki S. Imai R. Okamoto S. Mihara S. Yoshida Y. Akai S. and Fujioka H. Asymmetric synthesis of chiral spirocyclanes: a new route to the optically active

spiro[cyclopentane-1,1'-indan]-2,5-dione system 1817
Kita Y. Takebe Y. Murata K. Naka T. and Akai S. 1-Ethoxyvinyl acetate as a novel, highly reactive, and reliable acyl donor for enzymatic resolution of alcohols 7369
Kita Y. Takeda Y. Iio K. Yokogawa K. Takahashi K. and Akai S. An efficient preparation of *peri*-hydroxy dihydroquinone derivatives through a Pummerer-type rearrangement of silylene-protected *peri*-hydroxy aromatic sulfoxides 7545
Kita Y. see Fujioka H. 2245
Kitagaki S. see Kita Y. 1817
Kitagawa H. see Fujioka H. 2245
Kitagawa K. see Futaki S. 201
Kitagawa T. see Okazaki T. 1035
Kitagawa Y. see Ochiai M. 8421
Kitaguchi J. see Hashimoto K. 2275
Kitahara Y. see Tanaka K. 5925
Kitamura M. Miki T. Nakano K. and Noyori R. Conjugate addition of diorganozincs to α,β-unsaturated ketones catalyzed by a copper(I)–sulfonamide combined system 5141
Kitamura T. Kotani M. and Fujiwara Y. An efficient ligand exchange reaction of β-(trifyloxy)vinyliodonium triflates with arylithium reagents leading to diaryliodonium triflates 3721
Kitamura T. see Okuma K. 8883
Kitamura T. see Taniguchi Y. 3465
Kitano K. see Nakamura K. 1629
Kitano Y. see Matsumoto M. 397
Kitano Y. see Matsumoto M. 5939
Kitano Y. see Matsumoto M. 8191
Kitao M. see Miki S. 2049
Kitaura K. see Mori H. 7771
Kitayama K. Tsuji H. Uozumi Y. and Hayashi T. Asymmetric hydrosilylation of cyclic 1,3-dienes catalyzed by an axially chiral monophosphine–palladium complex 4169
Kitazume T. see Hasegawa E. 7079
Kittaka A. Tanaka H. Yamada N. and Miyasaka T. Nucleoside anomeric radicals via 1,5-translocation: facile access to anomeric spiro nucleosides 2801
Kitteringham J. see Fortunak J. M. D. 5683
Kiyooka A. see Fujita K. 4035
Kiyooka S. Kira H. and Hena M. A. Catalyst control in a chiral borane-mediated aldol reaction. Both *syn*- and *anti*-aldols in almost optically pure state obtained from one racemic aldehyde 2597
Kiyooka S. Tsutsui T. and Kira T. Complete asymmetric induction in [1,2]-Wittig rearrangement of a system involving a binaphthol moiety 8903
Kiyoto T. see Yamashita T. 8195
Kizil M. Lampard C. and Murphy J. A. Corrigendum 5027
Kizil M. Lampard C. and Murphy J. A. Studies of the tetrathiafulvalene mediated radical–polar crossover reaction directed toward the total synthesis of alkaloid natural products 2511
Kizu H. see Griffiths R. C. 3207
Klar U. Neef G. and Vorbrüggen H. Perfluorobutanesulfonyl fluoride—1,8-diazabicyclo-[5.4.0]undec-7-ene as a useful system in diol–epoxide transformation 7497
Klar U. and Deicke P. High stereoselectivity in the Wittig reaction induced by the interaction of charges 4141
Klärner F.-G. Golz T. Uhländer C. and Yaslak S. σ-Bishomoaromatic heterocycles: reactivity and synthesis of 3-oxatetracyclo[3.3.0.0^{2,8}0^{4,6}]octane by photolysis at 185 nm 1385
Klaubert D. H. see Gee K. R. 7905
Klein D. Braekman J.-C. Daloze D. Hoffmann L. and Demoulin V. Laingolide, a novel 15-membered macrolide from *Lyngbya bouillonii* (Cyanophyceae) 7519
Klement I. see Riguet E. 5865
Klimkina E. V. see Bubnov Y. N. 1317
Klinedinst D. see Posner G. H. 7225
Klinedinst D. see Posner G. H. 815
Klinguer C. Melnyk O. Loing E. and Gras-Masse H. Synthesis of hydrazinopeptides using solid phase N-amination. Application to chemical ligation 7259
Klunder A. J. H. see Bakkeren F. J. A. D. 8003
Klunder A. J. H. see Thuring J. W. J. F. 4759
Knerr L. Pannecoucke X. Schmitt G. and Luu B. Preferential phosphorylation at the primary alcohol of non-protected thymidine or carbohydrates 5123
Knight D. W. see Coogan M. P. 6417
Knight D. W. see Li S. K. Y. 5615
Knight J. and Sweeney J. B. Further hydroxyiodination of 1-acetoxycyclohex-2-enes: preparation of tetraacetyl conduritol D 6579
Knight J. G. see Harm A. M. 6189
Knill A. M. see Della E. W. 5805
Knobelsdorf J. see Chen H. G. 8129
Knochel P. see Kishan Reddy Ch. 4495
Knochel P. see Longeau A. 2209
Knochel P. see Longeau A. 6099
Knochel P. see Püntener K. 8165
Knochel P. see Riguet E. 5865
Knochel P. see Schwink L. 25
Knochel P. see Stevenson T. M. 8375
Knölker H.-J. Goesmann H. and Gonser P. Transition metal complexes in organic synthesis—XXXII. Fluxionality of (η^4-1-aza-1,3-butadiene)tricarbonyliron complexes 6543
Knölker H.-J. Gonser P. and Koegler T. Transition metal–diene complexes in organic synthesis—XXIX. Separation of planar chiral tricarbonyliron–diene complexes at cyclodextrin bonded chiral stationary phases by HPLC 2405
Knölker H.-J. and Braxmeier T. Isocyanates—III. Synthesis of carbamates by DMAP-catalyzed reaction of amines with di-*tert*-butyldicarbonate and alcohols 5861
Knölker H.-J. and Fröhner W. Transition metal complexes in organic synthesis—XXXV. First total synthesis of furostifoline 9183
Knölker H.-J. and Hofmann C. Transition metal complexes in organic synthesis—XXXIII. Molybdenum-mediated total synthesis of girinimbine,

murrayacine, and dihydroxygirinimbine 7947
Knouzi N. see Zahouily M. 8387
Kobata K. Yoshikawa K. Kohashi M. and Watanabe T. Enzymatic synthesis of capsaicin analogs with liver acetone powder 2789
Kobayashi H. see Matsumoto M. 397
Kobayashi H. see Matsumoto M. 5939
Kobayashi H. see Matsumoto M. 8191
Kobayashi J. Kawasaki N. and Tsuda M. Absolute stereochemistry of keramaphidin B 8203
Kobayashi J. Takahashi M. and Ishibashi M. Amphidinolide Q, a novel 12-membered macrolide from the cultured marine dinoflagellate *Amphidinium* sp. 1449
Kobayashi J. Tsuda M. Cheng J. Ishibashi M. Takikawa H. and Mori K. Absolute stereochemistry of penaresidins A and B 6775
Kobayashi K. Akamatsu H. Takada K. Morikawa O. and Konishi H. 3-Benzyloxy-1-isocyanopropenes. Synthesis and use as 3-hydroxypropanoyl anion equivalents 2437
Kobayashi K. see Kasatkin A. 1849
Kobayashi K. see Kasatkin A. 6960
Kobayashi K. see Konishi H. 7383
Kobayashi K. see Konishi H. 8547
Kobayashi M. Masumoto K. Nakai E. and Nakai T. Stereochemical control in the silyl triflate-mediated Claisen rearrangement of allylic esters 3005
Kobayashi R. see Shima H. 667
Kobayashi R. see Shimizu T. 6755
Kobayashi S. Hachiya I. Suzuki S. and Moriwaki M. Polymer-supported silyl enol ethers. Synthesis and reactions with imines for the preparation of an amino alcohol library 2809
Kobayashi S. Hachiya I. and Yasuda M. Aldol reactions on solid phase. $Sc(OTf)_3$-catalyzed aldol reactions of polymer-supported silyl enol ethers with aldehydes providing convenient methods for the preparation of 1,3-diol, β-hydroxy carboxylic acid, and β-hydroxy aldehyde libraries 5569
Kobayashi S. Ishitani H. Komiyama S. Oniciu D. C. and Katritzky A. R. A novel Mannich-type reaction: lanthanide triflate-catalyzed reactions of *N*-(α-aminoalkyl)benzotriazoles with silyl enolates 3731
Kobayashi S. Moriwaki M. Akiyama R. Suzuki S. and Hachiya I. Parallel synthesis using Mannich-type three-component reactions and 'field synthesis' for the construction of an amino alcohol library 7783
Kobayashi S. Moriwaki M. and Hachiya I. Hafnium trifluoromethanesulfonate ($Hf(OTf)_4$) as an efficient catalyst in the Fries rearrangement and direct acylation of phenol and naphthol derivatives 2053
Kobayashi S. Moriwaki M. and Hachiya I. Catalytic direct C-acylation of phenol and naphthol derivatives using carboxylic acids as acylating reagents 4183
Kobayashi S. Nagayama S. and Busujima T. Polymer scandium-catalyzed three-component reactions leading to diverse amino ketone, amino ester, and amino nitrile derivatives 9221
Kobayashi S. see Ishitani H. 7357
Kobayashi S. see Ito H. 1795
Kobayashi S. see Ito H. 1799
Kobayashi S. see Kanemasa S. 8505
Kobayashi S. see Reddy R. S. 9335
Kobayashi T. see Hashimoto K. 2275
Kobayashi T. see Oikawa H. 6169
Kobayashi Y. Kishihara K. and Watatani K. Two-step conversion of 2-substituted furans into γ-oxo-α,β-unsaturated carboxylic acids. Formal synthesis of (+)-patulolide A and (–)-pyrenophorin 4385
Kobayashi Y. Watatani K. Kikori Y. and Mizojiri R. A new approach to (+)-brefeldin A via a nickel-catalyzed coupling reaction of cyclopentenyl acetate and lithium 2-furylborate 6125
Kobayashi Y. and Mizojiri R. Nickel-catalyzed coupling reaction of lithium organoborates and aryl mesylates possessing an electron withdrawing group 8531
Kobayashi Y. see Iseki K. 5149
Kochetkov N. K. see Borodkin V. S. 1489
Kocis P. see Seneci P. 6319
Köck M. Reif B. Fenical W. and Griesinger C. Differentiation of HMBC two- and three-bond correlations: a method to simplify the structure determination of natural products 363
Kocovsky P. Dunn V. Grech J. M. Srogl J. and Mitchell W. L. Selective reduction of the carbonyl group in organomercurials. A facile method for the protection–deprotection of the mercurio group and a new route to annulated lactones 5585
Kocovsky P. Grech J. M. and Mitchell W. L. A stereoselective synthesis of *cis*- and *trans*-fused lactones via the palladium(II)-catalyzed carbonylation of organomercurials 1125
Kodaka Y. see Shibata T. 8783
Kodama H. see Hori K. 5947
Kodama M. see Fukazawa Y. 1257
Kodama M. see Fukuyama Y. 1261
Kodama M. see Fukuyama Y. 6767
Kodama Y. Okumura M. Yanabu N. and Taguchi T. Synthesis of β-amino-α,α-difluoroketones by reactions of 1,1-difluorovinyl methyl ethers with *N*-acyliminium intermediates 1061
Kodama Y. Okumura M. Yanabu N. and Taguchi T. Corrigendum 2515
Koegler T. see Knölker H.-J. 2405
Koenig M. see Mirza-Aghayan M. 3109
Kofoed T. and Caruthers M. H. Synthesis of 5'-phosphonate linked thymidine deoxyoligonucleotides 6457
Koga K. see Fujita K. 4035
Koga K. see Sugasawa K. 7377
Koga K. see Yamashita T. 8195
Koga K. see Yasuda K. 6343
Koga T. see Fujita K. 1825
Kogan M. Valasinas A. and Frydman B. Synthesis of a decahydrohexapyrrin: a novel oligopyrrole of biosynthetic interest 763
Koganty R. R. see Qiu D. 595
Koh H. Y. see Kang H.-Y. 7549
Kohashi M. see Kobata K. 2789

Kohlbau H. J. see Kaiser T. 1187
Kohmoto S. Koyano I. Kishikawa K. Yamamoto M. and Yamada K. Intramolecular photocycloaddition of cyclopropenes. Ring strain-driven hydrogen transfer of 1,4-biradical intermediates 8879
Kohmoto S. Nakayama N. Takami J. Kishikawa K. Yamamoto M. and Yamada K. On the mechanism of the rearrangement of 7-vinylnorcaradienes 7761
Kohn H. and Wang S. Studies on the mechanism of activation of C(7) ethylenediamine substituted mitomycins. Relevance to the proposed mode of action of BMY-25067 and KW-2149 2337
Kohnke F. H. La Torre G. L. Parisi M. F. Menzer S. and Williams D. J. Large cyclic oligomers of furan and acetone. X-Ray crystal structure of the hexamer and first synthesis of the nonamer 4593
Kohnke F. H. see Fonte P. 6201
Kohnke F. H. see Fonte P. 6205
Koike N. see Hattori T. 2057
Koike N. see Nishizono N. 7569
Koiso Y. see Onoda T. 4397
Kojima N. see Kawagishi H. 7399
Kojima S. see Kajiyama K. 8409
Kojima S. see Ohno M. 9211
Kojima T. see Hojo H. 7391
Kokel B. A facile entry into a new heterocyclic system: synthesis of 4,5-annulated-2-dimethylamino-1,3,8,10-tetraaza-spiro[5.5]-1,4-undecadiene-7,9,11(3*H*,8*H*,10*H*)triones 3849
Koll D. see Vicente M. G. H. 261
Kollár L. see Skoda-Földes R. 2085
Kolodziej S. A. and Hamper B. C. Solid-phase synthesis of 5,6-dihydropyrimidine-2,4-diones 5277
Kolomiets A. F. see Osipov S. N. 615
Kolomitsin I. V. see Krasutsky P. A. 5673
Kolshorn H. see Cao D. 4487
Komatsu H. see Doi T. 6877
Komatsu K. Takimoto N. Murata Y. Wan T. S. M. and Wong T. Synthesis and properties of dialkyl derivatives of di[60]fullerenylbutadiyne and di[60]fullerenylacetylene: the buckydumbbells 6153
Komatsu K. see Kaneta N. 5385
Komatsu K. see Murata Y. 7061
Komatsu M. see Tsunoi S. 6729
Komiya N. Naota T. and Murahashi S.-I. Aerobic oxidation of alkanes in the presence of acetaldehyde catalysed by copper–crown ether 1633
Komiyama K. see Kam T.-S. 5765
Komiyama S. see Kobayashi S. 3731
Komori A. Kubota M. Ishida T. Niwa H. and Nogami T. Unusual reactions of C_{60} with aldehydes in the presence of aqueous ammonia 4031
Konda Y. Toida T. Kaji E. Takeda K. and Harigaya Y. First total synthesis of new diglycosides, neohancoside A and B from *Cynanchum hancockianum* 4015
Kondakov D. Y. Wang S. and Negishi E. Titanium-catalyzed cascade carboalumination of 2-alkyl-substituted dienes and related trienes 3803
Kondo K. see Yokoyama Y. 9309
Kondo S. see Higuchi H. 2601
Kondo T. see Mutou T. 7299
Königsberger K. Luna H. Prasad K. Repic O. and Blacklock T. J. Separation of *cis*/*trans*-cyclohexanecarboxylates by enzymatic hydrolysis: preference for diequatorial isomers 9029
Konishi H. Nakamura T. Ohata K. Kobayashi K. and Morikawa O. The acid-catalyzed condensation of 2-propylresorcinol with formaldehyde diethyl acetal. The formation and isomerization of calix[4]resorcinarene, calix[5]resorcinarene, and calix[6]resorcinarene 7383
Konishi H. Okuno T. Nishiyama S. Yamamura S. Koyasu K. and Terada Y. TTN oxidation of mixed halogenated phenols: synthesis of vancomycin model diaryl ether possessing a chlorine atom 8791
Konishi H. Yamaguchi H. Miyashiro M. Kobayashi K. and Morikawa O. Functionalization at the extraannular positions of calix[4]resorcinarene using a Mannich-type thiomethylation 8547
Konishi H. see Kobayashi K. 2437
Konishi K. see Iida A. 9219
Konishi K. see Ito A. 2585
Konishi K. see Takahashi C. 655
Konishi S. see Mizuno K. 7775
Konno H. Makabe H. Tanaka A. and Oritani T. Total synthesis of (15*S*,16*R*,19*S*,20*R*,34*S*)-diepomuricanin 5393
Konoike T. Kanda Y. and Araki Y. Directed lithiation of *N*-(*tert*-butoxycarbonyl)aminoisoxazole: synthesis of 4-substituted aminoisoxazoles 3339
Kónya K. see Pérez-Prieto J. 4923
Kooriyama Y. see Fujisawa T. 3881
Kóós M. A versatile route to 2,3-unsaturated sugar derivatives via corresponding 3-acetoxy-1-nitro-1-alkenes 415
Kopecky D. J. see Myers A. G. 3623
Korchagina D. V. see Polovinka M. P. 2631
Korchagina D. V. see Volcho K. P. 6181
Koreeda M. Gopalaswamy R. Yang J. and Tuinman R. J. Stereocontrolled synthesis of *syn*- and *anti*-diol epoxide metabolites of triphenylene 8267
Koreeda M. see Gopalaswamy R. 3651
Koreeda M. see Wu J. 3647
Kornilov A. see Arnone A. 3903
Kosemura S. see Li S. 7365
Koser G. F. see Calvo K. C. 1169
Koser G. F. see Rabah G. A. 6453
Koshida S. see Suda Y. 1053
Koshino H. Lee I.-K. Kim J.-P. Kim W.-G. Uzawa J. and Yoo I.-D. Agrocybenine, novel class alkaloid from the Korean mushroom *Agrocybe cylindracea* 4549
Koshino H. see Kimura Y. 4961
Koshino H. see Mimaki Y. 1245
Koshino H. see Yun B.-S. 8529
Köster H. see Aurich H. G. 841
Kostova K. see Dimitrov V. 6787
Kosugi M. see Sano H. 8891
Kotani M. see Kitamura T. 3721

Kotian P. L. see Elliott A. J. 5829
Kotora M. and Negishi E. Efficient and diastereoselective synthesis of (+)-goniobutenolide A via palladium-catalyzed ene–yne cross coupling–lactonization cascade 9041
Kotora M. see Takahashi T. 7521
Kotra L. P. see Yang T.-F. 8849
Kotsuki H. Teraguchi M. Shimomoto N. and Ochi M. Ytterbium(III) trifluoromethanesulfonate catalyzed high pressure reaction of epoxides with indole. An enantioselective synthesis of (+)-diolmycin A2 3727
Kotsuki H. and Shimanouchi T. A facile conversion of epoxides to β-halohydrins with silica gel-supported lithium halides 1845
Kouda K. Kusumi T. Ping X. Kan Y. Hashimoto T. and Asakawa Y. 2-Anthrylmethoxyacetic acid, a new chiral anisotropic reagent for elucidating the absolute configuration of acyclic alcohols 4541
Kouda K. Ooi T. Kaya K. and Kusumi T. Absolute stereostructure of a 2,3,7,13-tetrahydroxyoctadecanoic acid, the framework of taurolipid B produced by a fresh-water protozoan, *Tetrahymena thermophila* 6347
Kovács G. Gyarmati J. Somsák L. and Micskei K. Long-lived glycosyl–chromium(III) complex intermediates in aqueous medium. Preparation of pyranoid glycals 1293
Kovács J. see Sallas F. 4011
Kovács-Kulyassa Á. Herczegh P. and Sztaricskai F. J. First synthesis of conagenin diastereoisomers 2499
Kovaleski A. see Unelius C. R. 1505
Kovalev V. V. see Shokova E. A. 543
Kowalski J. and Lipton M. A. Solid-phase synthesis of a diketopiperazine catalyst containing the unnatural amino acid (*S*)-norarginine 5839
Koyama H. see Higuchi H. 1617
Koyano I. see Kohmoto S. 8879
Koyano T. see Kam T.-S. 5765
Koyasu K. see Konishi H. 8791
Kozikowski A. P. Ding Q. and Spiegel S. Synthesis of *erythro*-ω-aminosphingosine and preparation of an affinity column for sphingosine kinase purification 3279
Kozikowski A. P. Simoni D. Manfredini S. Roberti M. and Stoelwinder J. Synthesis of the 6- and 7-hydroxylated cocaines and pseudococaines 5333
Kozikowski A. P. see Fauq A. H. 1917
Kozlowski M. C. see Evans D. A. 7481
Kozyrev A. N. Dougherty T. J. and Pandey R. K. Effect of substituents in OsO_4 reactions of metallochlorins regioselective synthesis of isobacteriochlorins and bacteriochlorins 3781
Kozyrev A. N. Pandey R. K. Medforth C. J. Zheng G. Dougherty T. J. and Smith K. M. Syntheses and unusual spectroscopic properties of novel ketobacteriopurpurins 747
Kozyrev A. N. Zheng G. Zhu C. Dougherty T. J. Smith K. M. and Pandey R. K. Syntheses of stable bacteriochlorophyll-a derivatives as potential photosensitizers for photodynamic therapy 6431
Kraehmer R. see Weigelt D. 367
Kragl U. see Seelbach K. 1377
Král V. see Sessler J. L. 6469
Kranz M. and Kessler H. Novel synthesis of a Phe–Gly *E*-alkene dipeptide isostere 5359
Krasutsky P. A. Kolomitsin I. V. Carlson R. M. and Jones, Jr M. A new one-step method for oxaadamantane synthesis 5673
Kraszewski A. see Cieslak J. 4561
Krattinger B. and Callot H. J. New routes from porphyrins to stable phlorins. *meso*-Alkylation and reduction of *meso*-tetraphenyl- and octaalkylporphyrins 7699
Kraus G. A. Maeda H. and Chen L. Regioselective radical reactions on anhydrides 7245
Kraus G. A. and Watson B. M. The synthesis of *Z*-allylic alcohols via palladium-mediated reactions of stannoxanes with aryl halides 5287
Krause Bauer J. A. see Schnapp K. A. 2317
Krebs A. and Kazmaier U. The asymmetric ester enolate Claisen rearrangement as a suitable method for the synthesis of sterically highly demanding amino acids 7945
Kreimeyer A. Ughetto-Monfrin J. Namane A. and Huynh-Dinh T. Synthesis of acylphosphates of purine ribonucleosides 8739
Krein D. M. Sullivan P. J. and Turnbull K. The reaction of 4-substituted aroyl azides with $NaBH_4$/TFA 7213
Kreis W. see Stuhlemmer U. 2221
Kreiser W. Wiggermann A. Krief A. and Swinnen D. Synthesis of 2,2-dimethyl-4-cyclopentene-1,3-dione and 5,5-dimethyl-4-hydroxy-2-cyclopenten-1-one 7119
Kremsky J. N. Pluskal M. Casey S. Perry-O'Keefe H. Kates S. A. and Sinha N. D. Biotin and fluorescein labeling of biomolecules by active esters of 1-phenylpyrazolin-5-ones 4313
Krepinsky J. J. see Wang Z.-G. 6985
Krepinsky J. J. see Zhao B. P. 3093
Kretzschmar G. see Eisele T. 1389
Kreuzman A. J. see Costello C. A. 7469
Krief A. and Defrère L. Reaction of 1,3-diselenanes with metal amides 2667
Krief A. and Defrère L. Reaction of 1,3-diselenanes with organolithiums 8011
Krief A. and Defrère L. Synthesis of 2-lithio-1,3-diselenanes and 2-lithio-1,3-dithianes by Se/Li exchange: first successful trapping of axially oriented 2-lithio-1,3-diselenanes 8015
Krief A. and Swinnen D. Novel synthesis of vinyl cyclopropane carboxylic acids: application to the synthesis of *(d,l)*- and *(d)*-*cis*-chrysanthemic acid 7123
Krief A. see Kreiser W. 7119
Krishna P. R. see Krishnudu K. 6007
Krishnan V. see Sen A. 5421
Krishnan V. see Sen A. 8437
Krishnudu K. Krishna P. R. and Mereyala H. B. $Pd(II)Cl_2$ mediated oxidative cyclisation of some 3-hydroxy

4-vinyl furanoside derivatives to synthetically valuable bis-furanosides 6007
Kroke E. Willms S. Weidenbruch M. Saak W. Pohl S. and Marsmann H. Siliranes: formation, isonitrile insertions, and thermal rearrangements 3675
Kroon J. see Sliedregt K. M. 4237
Kroto H. W. see Benito A. M. 1085
Krotz A. H. Cole D. L. and Ravikumar V. T. Synthesis and deprotection of β-silylethyl protected *O,O,O*- and *O,O,S*-trialkylphosphorothioates 1999
Kroutil W. Mischitz M. Plachota P. and Faber K. Deracemization of (±)-*cis*-2,3-epoxyheptane via enantioconvergent biocatalytic hydrolysis using *Nocardia* EH1-epoxide hydrolase 8379
Krüger C. see Zimmermann K. 8371
Kruse C. G. see van Maarseveen J. H. 8249
Krysan D. J. A dramatic reversal of facial selectivity in the Sharpless asymmetric dihydroxylation of a sterically hindered 3-methylidene-benzofuran 1375
Krysan D. J. A practical synthesis of α-acylamino-β-keto-esters: acylation of alkyl hydrogen (acylamino)malonates via the $MgCl_2/R_3N$ base system 3303
Krzeminski M. see Zaidlewicz M. 7131
Krzossa B. see Kirmse W. 1197
Ku Y.-Y. Patel R. R. and Sawick D. P. A general, convenient and highly efficient synthesis of diarylmethanes by copper-catalyzed reaction 1949
Kubo A. Kubota H. Takahashi M. and Nunami K. Dynamic kinetic resolution utilizing 2-oxoimidazolidine-4-carboxylate as a chiral auxiliary: stereoselective synthesis of α-amino acids by Gabriel reaction 4957
Kubo H. see Iida A. 9219
Kubo K. Yaegashi S. Sasaki K. Sakurai T. and Inoue H. Simultaneous formation of isoquinoline and 1-azetine derivatives via photoacetyl migration of substituted α-dehydrophenylalanine 5917
Kubota H. see Kubo A. 4957
Kubota M. see Komori A. 4031
Kubota S. see Eto M. 2445
Kudrevich S. V. see Sharman W. M. 5831
Kugelman M. see Gala D. 8117
Kuhn H. see Braslau R. 7933
Kukkola P. J. Bilci N. A. and Ikeler T. J. A novel regio- and stereoselective synthesis of isoindolines 5065
Kula M.-R. see Seelbach K. 1377
Kulinkovich O. Masalov N. Tyvorskii V. De Kimpe N. and Keppens M. New synthetic route to the alkaloid withasomnine by ring transformation of a functionalized cyclopropanol via the parent pyrrolo[1,2-*b*]pyrazole 1095
Kulkarni S. V. Dhokte U. P. and Brown H. C. Use of (±)-isopinocampheyldichloroborane for the efficient synthesis of unsymmetrical ketones via stepwise hydroboration of alkenes 1763
Kulkarni S. V. and Brown H. C. Highly enantioselective synthesis of alkyl- and aryl-substituted α-allenic alcohols 4125
Kumar A. and Bhakuni V. Enantioselective epoxidation using liposomised *m*-chloroperbenzoic acid (LIP MCPBA) 4751
Kumar A. see Master H. E. 9253
Kumar A. see Yamashita T. 8195
Kumar B. see Rani A. 8037
Kumar K. A. see Marchand A. P. 467
Kumar N. see Black D. StC. 241
Kumar P. see Gurjar M. K. 8617
Kumar P. P. see Srikrishna A. 1683
Kumar R. see Bennasar M.-L. 3541
Kumar S. Studies toward the synthesis of 3,7β,8α-trihydroxy-9α,10α-epoxy-7,8,9,10-tetrahydrobenzo[*a*]pyrene, a reactive metabolite of benzo[*a*]pyrene 1527
Kumar S. A new abbreviated synthesis of 5-methylchrysene and its 2-hydroxy- and 8-hydroxy derivatives 6271
Kumar S. Bhalla V. Singh P. and Singh H. 2,8,14-Trithio[15]*m*-/*p*-phenylene crownophanes: Ag^+ selective receptors 3495
Kumar S. Kaur N. and Singh H. Synthesis and association behaviour of pyridine based 18-membered diamide–diester–thioether macrocycles 2071
Kumar S. see Nair V. 2315
Kumar V. S. see Venkateswara Rao B. 8613
Kumaran G. A novel one pot conversion of primary nitroalkanes to hydroximoyl chlorides 6407
Kumaravel G. see Shapiro M. J. 4671
Kundu D. see Ranganathan S. 5199
Kundu N. G. see Chowdhury C. 7323
Kunieda T. see Hashimoto N. 9237
Kunitomo J. see Kawai Y. 8905
Kunwar A. C. see Mehta G. 2289
Künzer H. Thiel M. and Peschke B. A vinyl sulfone/vinyl sulfoxide based route to C(6)–C(7) methylene-bridged derivatives of estradiol 1771
Künzer H. see Bojack G. 6103
Künzer H. see Ruhland T. 2757
Kuo L. H. see Paquette L. A. 3299
Kupfer R. Rosenberg M. G. and Brinker U. H. Synthesis of a sterically congested diazirine: 2-azicamphane 6647
Kurakata S. see Shiozaki M. 7271
Kurakata S. see Shiozaki M. 8627
Kuramochi T. Asaoka M. Ohkubo T. and Takei H. Total synthesis of (–)-cordiaquinone B 7075
Kuramoto M. Tong C. Yamada K. Chiba T. Hayashi Y. and Uemura D. Halichlorine, an inhibitor of VCAM-1 induction from the marine sponge *Halichondria okadai* Kadota 3867
Kuramoto M. see Chou T. 3871
Kuramoto M. see Chou T. 4027
Kuramoto M. see Wang G.-Y.-S. 1813
Kuroboshi M. see Shimizu M. 7387
Kuroda A. see Kawabata T. 4153
Kuroda M. see Mimaki Y. 1245
Kuroda T. see Yamanaka T. 4967
Kuroki Y. see Iseki K. 5149
Kurome T. see Inami K. 2043
Kurosawa K. see Nguyen V.-H. 4949
Kurth M. J. see Eisenberg S. W. E. 7683
Kurusu Y. see Masuyama Y. 7103

Kurys B. E. see Fink D. M. 995
Kusakabe T. see Yamamoto Y. 7801
Kusano M. see Kimura Y. 4961
Kusumi T. see Kouda K. 4541
Kusumi T. see Kouda K. 6347
Kusumi T. see Takahashi H. 7087
Kusumoto S. see Fukase K. 3343
Kusumoto S. see Fukase K. 6763
Kusumoto S. see Suda Y. 1053
Kuwajima I. see Takahashi Y. 5943
Kuwatani Y. see Iyoda M. 7987
Kuyl-Yeheskiely E. see van der Laan A. C. 7857
Kuzmenkov I. see Haddad N. 1663
Kvicala J. see Dolensky B. 6939
Kwon T. W. see Barton D. H. R. 3631
Kwong C.-Y. Leung M. Lin S.-C. Chan T.-L. and Chow H.-F. Synthesis and characterization of oligo(2,7-biphenylenylene-(*E*)-vinylene)s 5913
Kwong K.-P. see Tso T. S. C. 9249
Kyslík P. see Wong-Lun-Sang S. 3329

LaBell E. S. see McGill J. M. 3977
Labrie F. see Gauthier S. 5077
Laduron F. Ates C. and Viehe H. G. Diastereoselective cycloadditions of new trifluoromethyl azomethine ylides derived from trifluorothioacetamides 5515
Laghrissi M. see Sebti S. 3999
Laguerre M. see Vivas N. 2015
Lahlou E. H. see Luis J. G. 4213
Lahti P. M. see Wiberg K. B. 8285
Lai C.-Y. see Lin G. 193
Lai J.-Y. Yu J. Mekonnen B. and Falck J. R. Synthesis of curacin A, an antimitotic cyclopropane-thiazoline from the marine cyanobacterium *Lyngbya majuscula* 7167
Lai M.-L. Chang S.-C. Hwu C.-C. and Yeh M.-C. P. A novel synthetic approach to medium ring lactones via dienetricarbonyliron complexes 6149
Laignel B. see Denis C. 53
Lakshman M. K. and Zajc B. Regio- and stereocontrolled synthesis of aryl *cis* aminoalcohols from *cis* glycols 2529
Lakshmikantham M. V. see Mørkved E. H. 9149
Lal B. and Gangopadhyay A. K. A practical synthesis of free and protected guanidino acids from amino acids 2483
Lallemand J.-Y. see Anies C. 5519
Lallemand J.-Y. see Anies C. 5523
Lallemand J.-Y. see Ducrot P.-H. 3121
Lallemand J.-Y. see Muller B. 3313
Lalloz M.-N. see Gouverneur V. 6331
Lalonde J. J. see Persichetti R. A. 6507
Lam W. W.-L. Haynes R. K. Yeung L.-L. and Chan E. W.-K. Preparation of bi- and tridentate doubly P-chiral diphosphine dioxide ligands for asymmetric catalysis 4733
Lam W. W.-L. see Haynes R. K. 4729
Lamare S. see Parker M.-C. 8383
Lamartine R. see Pellet-Rostaing S. 5889
Lamartine R. see Regnouf-de-Vains J.-B. 6311
Lamas C. see Ezquerra J. 5813
Lamas C. see Ezquerra J. 683
Lambusta D. Nicolosi G. Patti A. and Piattelli M. Lipase-mediated resolution of racemic 2-hydroxymethyl-1-methylthioferrocene 127
Lammin S. G. Pedgrift B. L. and Ratcliffe A. J. Conversion of anilines to bis-Boc protected *N*-methylguanidines 6815
Lampard C. see Kizil M. 2511
Lampard C. see Kizil M. 5027
Lampe T. F. J. and Hoffmann H. M. R. Asymmetric synthesis of the C(10)–C(16) segment of the bryostatins 7695
Lamture J. B. Iverson B. and Hogan M. E. An intensely luminescent polymeric lanthanide chelator for multiple fluorescence labeling of biomolecules 6483
Landais Y. and Parra-Rapado L. Epoxidation and cyclopropanation of 2-silyl-3-alkenols. A study of 1,2-asymmetric induction 1205
Landais Y. and Parra-Rapado L. Mercuri-desilylation of chiral cyclopropylmethylsilanes 1209
Landino L. M. see Shawe T. T. 3823
Landry D. W. see Sun L. 1547
Lane A. L. see Blériot Y. 7155
Lane S. J. Marshall P. S. Upton R. J. Ratledge C. and Ewing M. Corrigendum 1
Langa F. see de la Cruz P. 1113
Lange C. see Bach T. 4363
Langer F. see Longeau A. 2209
Langer T. and Helmchen G. Highly efficient new catalysts for enantioselective transfer hydrogenation of ketones 1381
Langley D. R. see Kant J. 6495
Langley K. A. see Vaghefi M. M. 4853
Langlois B. R. see Billard T. 6865
Langlois N. and Dahuron N. Selective reduction of 2-(β-cyanoalkyl)oxazolines into cyclic amidines 3993
Langlois Y. see Sageot O. 7019
Lanham K. see Braslau R. 7933
Lankin D. C. see Khanna I. K. 1355
Lantos I. see Flisak J. R. 4639
Laplace G. see Marek D. 49
Lara A. see Barrero A. F. 3757
Larchevêque M. see Haddad M. 4525
Larchevêque M. see Imogaï H. 2573
Larden D. W. and Cheung H. T. A. Synthesis of *N*-α-aminoacyl derivatives of melphalan for potential use in drug targeting 7581
Largeron M. Auzeil N. Dakova B. Bacqué E. Paris J.-M. and Fleury M.-B. Incidence of the peptidic lactone opening on the electrochemical reduction of pristinamycin I_A 7499
Larhed M. Lindeberg G. and Hallberg A. Rapid microwave-assisted Suzuki coupling on solid-phase 8219
Laronze J.-Y. see Noé E. 5701
Laronze J.-Y. see Noé E. 8823
Larsen R. D. see Davies I. W. 1725
Larsen R. D. see Davies I. W. 813
Larsen R. D. see Senanayake C. H. 3271
Lasalvia M. see Graziano M. L. 527
Lash T. D. and Chaney S. T. Conjugated macrocycles related to the porphyrins—VII. Tropiporphyrin: tropylium versus porphyrinoid aromaticity 8825
Lash T. D. see Chandrasekar P. 4873
Lasne M. C. see Jouen C. 2413

Laso N. M. Quiclet-Sire B. and Zard S. Z.
A new selective reduction of nitroalkenes into enamides 1605
Lassaletta J. M. Fernández R. Martín-Zamora E. and Pareja C.
Stereospecific addition of formaldehyde dialkylhydrazones to sugar aldehydes. Synthesis of cyanohydrins and α-hydroxy aldehydes 5787
Lathbury D. see Page P. C. B. 8929
Lathbury D. C. see Andrews I. P. 4811
La Torre G. L. see Kohnke F. H. 4593
Lattanzi A. see Palombi L. 7849
Lau W. Y. Zhang L. Wang J. Cheng D. and Zhao K.
Preparation of 3'-phosphonate analogs of 2',3'-dideoxynucleosides 4297
Laurens A. see Gleye C. 9301
Laurent A. see Bartnik R. 8751
Laurent E. see Bartnik R. 8751
Lautens M. and Ma S.
Reductive and base-induced cleavage reactions of oxabicyclic compounds 1727
Lavielle S. see Brunissen A. 6713
Lawrie K. W. M. see Bradley E. L. 7329
Lawrie K. W. M. see Bradley E. L. 6935
Lawry J. see Kerr R. G. 8305
Lawson J. A. see Adiyaman M. 4849
Lázaro A. see Bennasar M.-L. 3541
Lazaro R. see Hua T. D. 175
Lazarova T. I. see Jung M. E. 7
Lazrek H. B. Khaïder H. Rochdi A. Barascut J.-L. and Imbach J.-L.
Synthesis of new acyclic nucleoside phosphonic acids by Michael addition 4701
Leadlay P. F. see Less S. L. 3511
Leadlay P. F. see Less S. L. 3515
Leadlay P. F. see Less S. L. 3519
Leak D. J. see Archer I. V. J. 8819
Le Bail M. see Besson L. 3307
Leban J. J. see Spaltenstein A. 1343
Lebeau L. see Nuss S. 5705
Lebedeva V. S. see Mironov A. F. 6395
Lebel H. see Charette A. B. 7925
Le Bozec H. see Dupau P. 7503
Lebreton J. Alphand V. and Furstoss R.
A short chemoenzymatic synthesis of (+)-multifidene and (+)-viridiene 1011
Lebrilla C. see Eisenberg S. W. E. 7683
Lebrun P. see Masereel B. 7253
Lebrun S. see Couture A. 7749
Lecea B. see Arrastia I. 245
Lecomte S. see Godebout V. 7255
Le Corre M. see Hercouet A. 4529
Lecouvey M. see Coutrot P. 1595
Lee A. S.-Y. and Dai W.-C.
A simple and highly efficient preparation of arylstannane via sonochemical Barbier reaction 495
Lee B. H. and Clothier M. F.
Functionalization of marcfortine A at C12 and C17 by treatment with metallic oxidizing agents 6053
Lee C.-H. see Heo P.-Y. 1521
Lee C.-H. see Heo P.-Y. 197
Lee C. S. and Forsyth C. J.
Synthesis of the central C18–C30 core of the phorboxazole natural products 6449
Lee D. see Fleming I. 6929
Lee D.-S. see Yang T.-K. 4537
Lee E. Li K. S. and Lim J.
Radical cyclization of β-aminoacrylates: stereoselective synthesis of indolizidines 167B and 209D 1445
Lee E. and Yoon C. H.
8-*endo* Cyclization of (alkoxycarbonyl)methyl radicals: stereoselective synthesis of (–)-clavukerin A and (–)-11-hydroxyguaiene 5929
Lee H. see Strekowski L. 4655
Lee H.-J. see Noh D.-Y. 7603
Lee H.-S. and Kim K.
Reactions of 5-arylimino-4-chloro-5*H*-1,2,3-dithiazoles with stable phosphoranes: novel preparation of dithiomethylenephosphoranes 869
Lee H.-S. and Kim K.
Reactions of 4-chloro-5*H*-1,2,3-dithiazol-5-thione with primary and secondary alkylamines: novel method for preparing *N*-alkyl- and *N,N*-dialkylcyanothioformamides 3709
Lee H.-W. see Kang S.-K. 3723
Lee H. J. see Yoon N. M. 8527
Lee H. J. see You Z. 1165
Lee I.-K. see Koshino H. 4549
Lee J. and Cha J. K.
Selective cleavage of allyl ethers 3663
Lee J. and Lee P. H.
Preparation of β'-phenylsulfonyl α,β-unsaturated ketones and unsymmetric dialkenyl ketones from 2-alkenyl-2-methoxycyclopropyl phenyl sulfones 9305
Lee K.-H. see Wang T.-C. 6369
Lee K.-S. see Jin M.-J. 8767
Lee L. see Benson S. C. 5061
Lee M. L. see Chen Z. 6831
Lee N. Kim Y.-W. Chang K. Kim K. H. Jew S.-S. and Kim D.-K.
Enantioselective synthesis of (*R*)- and (*S*)-2-alkyl-1,4-butanediols via enantiomerically pure 3-alkyl-5-(menthyloxy)butyrolactones 2429
Lee N. Y. and Chung Y. K.
Synthesis of cyclopentenones: the new catalytic cocyclization reaction of alkyne, alkene and carbon monoxide employing catalytic $Co(acac)_2$ and $NaBH_4$ 3145
Lee P. H. see Lee J. 9305
Lee S. see Park J. 6137
Lee S.-G. see Cho S.-D. 7059
Lee S.-S. Chang W.-L. and Chen C.-H.
Curcapitoside, a novel glucosyl-fused phenanthropyran isolated from *Curculigo capitulata* 4405
Lee S.-S. see Yu C.-M. 7095
Lee S. B. and Hong J.-I.
Encapsulation of small organic molecules by a self-assembled molecular capsule through charged hydrogen bonding interaction 8501
Lee S. H. see Kang H.-Y. 7549
Lee T.-H. Liao C.-C. and Liu W.-C.
Stereocontrolled syntheses of *cis*-decalin and bicyclo[4.2.2]-dec-7-en-4-one derivatives from 2-methoxyphenols. First examples of two-carbon ring expansion of 2-vinylbicyclo-[2.2.2]octenols 5897
Lee T.-H. and Liao C.-C.
Stereoselective synthesis of (±)-(13*E*)-2-oxo-5α-*cis*-17α,20α-cleroda-3,13-dien-15-oic acid, an alleged *cis*-clerodane diterpenic acid 6869
Lee W. S. see Nagao Y. 393
Lee W. S. see Nagao Y. 861
Lee Y. C. see Wang L.-X. 1975
Lee Y. R. see Pirrung M. C. 2391
Lefebvre O. see Brigaud T. 6115
Lefèvre V. Dat Y. and Ripoll J.-L.
Dimethylsilanethione—generation by retro-ene reaction and cycloaddition with ketene 7017

Leffelman C. see Stille J. R. 9267
Lefranc M.-P. see Hua T. D. 175
Le Goaster C. see Pellon P. 4713
Leggio A. Liguori A. Procopio A. Siciliano C. and Sindona G. Synthesis of 4'-aza analogues of 2',3'-dideoxythymidine by 1,3-dipolar cycloadditions of nitrones to 1-*N*-vinyl-thymine 1277
Legoupy S. Crévisy C. Guillemin J.-C. and Grée R. Synthesis and reactivity of new chiral rhenium complexes of unsaturated alcohols 1225
Legoy M.-D. see Parker M.-C. 8383
Lehn J.-M. see Gersch B. 2213
Lehn J.-M. see Lorente A. 4417
Lellouche J.-P. see Lucet-Levannier K. 2007
Lemaire-Audoire S. Savignac M. Dupuis C. and Genêt J.-P. Intramolecular Heck-type reactions in aqueous medium. Dramatic change in regioselectivity 2003
Lemal D. M. see Lindner P. E. 9165
Le Marouille J.-Y. see Denis C. 53
Le Maux P. see Morice C. 6701
Le Maux P. see Poignant G. 7511
Le Merrer Y. see Poitout L. 1609
Le Merrer Y. see Poitout L. 1613
Lemoine C. A. see Demonceau A. 1025
Lemoine R. C. see Trost B. M. 9161
Lemoine S. Adam P. Albrecht P. and Connan J. Novel series of diaromatic 14-methyl steroids occurring in petroleum 2837
Lenz D. M. see Mayer J. P. 8081
León F. see Méndez J. M. 4099
León M. see Aceña J. L. 8957
Leon P. see Tamura S. Y. 4109
Le Plouzennec M. see Poignant G. 7511
Le Quesne P. W. see Moussa M. M. 6479
Leriche P. Belyasmine A. Sallé M. Frère P. Gorgues A. Riou A. Jubault M. Orduna J. and Garín J. Polyacetyl-substituted tetrathiafulvalenes and 1,3-dithiolic derivatives from hex-3-yn-2,5-dione 8861
Leriche P. Giffard M. Riou A. Majani J.-P. Cousseau J. Jubault M. Gorgues A. and Becher J. Bis(trisubstituted tetrathiafulvalenyl) disulfides: disulfide-bridged TTF dimers 5115
Lermontov S. A. Rakov I. M. Zefirov N. S. and Stang P. J. A novel method of C–C bond formation via phenylation of terminal acetylenes by triphenylbismuth difluoride 4051
Leroy F. see Augé J. 7715
Less S. L. Handa S. Leadlay P. F. Dutton C. J. and Staunton J. Biosynthesis of tetronasin—V. Novel fluorinated and non-fluorinated analogues of tetronasin via intact incorporation of di-, tri- and tetraketide analogue precursors 3511
Less S. L. Handa S. Millburn K. Leadlay P. F. Dutton C. J. and Staunton J. Biosynthesis of tetronasin—VI. Preparation of structural analogues of the diketide and triketide biosynthetic precursors to tetronasin 3515
Less S. L. Leadlay P. F. Dutton C. J. and Staunton J. Biosynthesis of tetronasin—VII. Preparation of structural analogues of the tetraketide biosynthetic precursor to tetronasin 3519
Leszczynski P. see Jaworski J. S. 3553
Lete E. see Collado M. I. 6193
Lete E. see Manteca I. 7841
LeTourneau M. E. see Huff B. E. 3655
Letsinger R. L. see Horn T. 743
Letsinger R. L. see Zhang G. 6243
Lett R. see Calvo D. 1023
Lett R. see Delpech B. 1015
Lett R. see Delpech B. 1019
Leung M. see Kwong C.-Y. 5913
Leung S. H. see Jacobi P. A. 6069
Leung W.-H. Yu M.-T. Wu M.-C. and Yeung L.-L. Molecular sieves promoted regioselective ring opening of *N*-tosylaziridines catalyzed by imidochromium complexes 891
Levasseur F. see Godebout V. 7255
Levell J. R. see Katritzky A. R. 5641
Levenberg M. see Hill D. R. 787
Levin J. I. The preparation of forskolin analogs via quinone Diels–Alder reactions 3079
Levinson E. G. see Mironov A. F. 6395
Lévy J. see Noé E. 5701
Lévy J. see Noé E. 8823
Lewis C. N. see Floyd C. D. 8045
Lewis M. L. see Beddoes R. L. 9119
Lewis M. L. see Gilbert P. 9115
Lewis N. J. see Alcaraz L. 6619
Lewis N. J. see Andrews I. P. 4811
Lewis N. J. see Kapfer I. 2101
Lex J. see Buhr S. 1195
Leydet A. see Winum J.-Y. 1781
Lhoták P. and Shinkai S. Structurally-unusual calix[4]arene derivatives generated by intra- and intermolecular McMurry reactions 645
Li A. see Jones G. B. 3643
Li C. see Russell G. A. 2557
Li C.-J. Wang D. and Slaven, IV W. T. Synthesis of a bis-(binaphthol) 4459
Li C.-J. see Chen D.-L. 295
Li C.-J. see Lu Y.-Q. 471
Li H. see Bu X. R. 7331
Li H.-H. see Lin J.-M. 5159
Li H.-Y. and Boswell G. A. A facile synthesis of fluorinated 4-hydroxy-coumarins 1551
Li H.-Y. see Kam T.-S. 8811
Li H.-Y. see Robinson A. 8321
Li J. see Katritzky A. R. 5641
Li J. X. see Kadota S. 7283
Li K. S. see Lee E. 1445
Li P. see Sun L. 1547
Li S. Ohba S. Kosemura S. and Yamamura S. Synthetic studies on manzamine A: construction of the tricyclic ABC ring subunit I 7365
Li S. K. Y. Knight D. W. and Little P. B. Double deprotonation of *N*-Boc-aminobenzotriazole for the preparation of substituted benzyne precursors 5615
Li T. see Barton D. H. R. 8329
Li V. D. see Barkanova S. V. 1637
Li W. see Miller R. A. 3429
Li W.-S. see Mascal M. 3505
Li X. and Ramamurthy V. Electron transfer reactions within zeolites: photooxidation of stilbenes 5235
Li X. and Tanner D. D. A new type of NADH model compound: synthesis and reactions 3275
Li Y. see Yue X. 671
Li Y.-J. see Schultz A. G. 6511
Li Y.-L. and Wu Y.-L. Synthesis and glycosylation of thio-D-fructofuranoside donors 7413

Li Z. Bouhadir K. H. and Shevlin P. B.
Convenient syntheses of 6,5 open and 6,6 closed cycloalkylidenefullerenes 4651
Liang G.-B. and Feng D. D.
Corrigendum 8961
Liang G.-B. and Feng D. D.
An improved oxadiazole synthesis using peptide coupling reagents 6627
Liao C.-C. see Lee T.-H. 5897
Liao C.-C. see Lee T.-H. 6869
Liao J. see Wang K. K. 4087
Liao J.-W. see Blankenfeldt W. 7361
Liao L. see Villemin D. 8733
Liao L.-X. and Zhou W.-S.
A new approach to clavalanine β-lactam antibiotic: transformation of chiral α-furfuryl amide into the δ-hydroxyl-α-amino lactones via asymmetrical dihydroxylation 6371
Liao Q. see Zhu Z. 8553
Liao S. Han Y. Qiu W. Bruck M. and Hruby V. J.
Syntheses of highly constrained β-aryl isohexanoic acid derivatives via asymmetric Michael addition 7917
Liao S. and Hruby V. J.
Asymmetric synthesis of optically pure β-isopropylphenylalanine: a new β-branched unusual amino acid 1563
Liard A. Quiclet-Sire B. and Zard S. Z.
A practical method for the reductive cleavage of the sulfide bond in xanthates 5877
Liebscher J. see Rottmann A. 359
Lightner D. A. see Thyrann T. 315
Liguori A. see Leggio A. 1277
Liguori L. see Araneo S. 6897
Lillo M. A. see Curci R. 249
Lim H.-J. and Sulikowski G. A.
Synthesis of the antitumor antibiotic FR-66979: Dmitrienko oxidative expansion of a fully functional core structure 5243
Lim J. see Lee E. 1445
Lin C.-H. see Sieburth S. McN. 1141
Lin G. and Lai C.-Y.
Linear free energy relationships of the inhibition of pancreatic cholesterol esterase by 4-nitrophenyl-*N*-alkylcarbamate 193
Lin G.-H. see Chou T.-C. 8779
Lin G.-Q. and Zhong M.
The first synthesis of optically pure (+)- and (–)-isokotanin A and the assignment of their absolute configuration 3015
Lin H.-C. see Chou S.-S. P. 7279
Lin J. see Thompson C. M. 8979
Lin J.-M. Li H.-H. and Zhou A.-M.
Synthesis of benzyl/allyl alkyl ethers from corresponding magnesium alkoxides 5159
Lin K.-Y. and Matteucci M. D.
The synthesis and hybridization properties of an oligonucleotide containing hexafluoroacetone ketal internucleotide linkages 8667
Lin S.-C. see Kwong C.-Y. 5913
Lin S.-Y. see Strekowski L. 4655
Lin Y. see Vuligonda V. 1941
Lin Y.-M. see Yao C.-F. 6339
Linda P. see Ebert C. 9377
Lindeberg G. see Larhed M. 8219
Lindel T. Jensen P. R. and Fenical W.
Lagunapyrones A–C: cytotoxic acetogenins of a new skeletal class from a marine sediment bacterium 1327
Linden A. see Ayerbe M. 3055
Linden A. see Palomo C. 6931
Linderman R. J. Cusack K. P. and Jaber M. R.
Preparation of enantiomerically enriched α-alkoxystannanes by regioselective acetal exchange or acetal hydrolysis 6649
Linderman R. J. and Chen S.
Diastereoselective addition of alkynylstannanes to alpha stannyl substituted mixed acetals: synthesis of precursors for allenyl carbinols 3819
Lindner P. E. and Lemal D. M.
Energetics of hydrate and hemiketal formation for highly fluorinated ketones 9165
Lindquist N. Lobkovsky E. and Clardy J.
Tridentatols A–C, novel natural products of the marine hydroid *Tridentata marginata* 9131
Lindyberg S. E. see Herrick R. S. 5289
Linker T. Maurer M. and Rebien F.
Highly regioselective intramolecular hydroxymethylation of α,β-unsaturated carboxylic acids 8363
Linnane P. see Frost C. 9139
Linstrumelle G. see Mladenova M. 6547
Liotta D. C. see Alexander C. W. 1961
Liotta D. C. see Captain L. F. 4293
Lippa B. S. see Zhu Z. 1937
Lipshutz B. H. Aue D. H. and James B.
An *ab initio* molecular orbital study on the Lewis acidity of TMS-Cl and TMS-CN toward an α,β-unsaturated aldehyde: are these acid–base interactions important in organocuprate 1,4-additions to enones? 8471
Lipton M. A.
Diastereoselective recognition of β anomers of phenyl glucosides by a cyclobis(paraquat-*p*-phenylene) receptor: a computational study 287
Lipton M. A. see Kowalski J. 5839
Liskamp R. M. J. see Löwik D. W. P. M. 8253
Liskamp R. M. J. see Sliedregt K. M. 4237
List B. see Mulzer J. 2403
List B. see Mulzer J. 9177
Lithgow A. M. see Urones J. G. 1659
Little P. B. see Li S. K. Y. 5615
Little R. D. see Schwaebe M. K. 6635
Liu A. Dillon K. Campbell R. M. Cox D. C. and Huryn D. M.
Synthesis of E-selectin inhibitors: use of an aryl-cyclohexyl ether as a disaccharide scaffold 3785
Liu B. see Wee A. G. H. 145
Liu C. Hashimoto Y. and Saigo K.
Regio- and stereoselective ring-opening reaction of 2,3-epoxy amines with organo-aluminum reagents leading to 2-substituted 3-amino alcohols 6177
Liu C. and Sowa, Jr J. R.
Synthesis of (1*R*)-(+)-nopinone- and (1*S*)-(–)-verbenone-derived chiral annulated indenes via electrocyclic reactions 7241
Liu C.-F. Rao C. and Tam J. P.
Acyl disulfide-mediated intramolecular acylation for orthogonal coupling between unprotected peptide segments. Mechanism and application 933
Liu C. Z. and Rabideau P. W.
Corannulene synthesis via the pyrolysis of silyl vinyl ethers 3437
Liu D. see Chan T. Y. 8097
Liu H. see Crich D. 3105
Liu H. see Davis F. A. 5473
Liu H.-J. Sun D. and Shia K.-S.
Polyene cyclization promoted by the cross conjugated α-

carbalkoxy enone system 8073
Liu H.-J. Wu C.-L. Hashimoto T. and Asakawa Y. Nudenoic acid: a novel tricyclic sesquiterpenoid from the Taiwanese liverwort *Mylia nuda* 9307
Liu J. see Senanayake C. H. 3271
Liu K.-T. Tsao M.-L. and Chao I. Variation of coplanarity between aryl ring and cationic center at transition state. Agreement of results of solvolytic study with *ab initio* calculations 4173
Liu L. see Flisak J. R. 4639
Liu L. see Martin O. R. 1991
Liu Q. see Xue L. 1921
Liu R. S. H. see Asato A. E. 419
Liu R. S. H. see Simmons C. J. 4103
Liu W. Walker, II J. A. Chen J. J. Wise D. S. and Townsend L. B. Synthesis of pyrazine C-ribosides via direct metalation 5325
Liu W. see Moss R. A. 279
Liu W.-C. see Lee T.-H. 5897
Liu X. and Reese C. B. 3'-Thiouridylyl-(3'→5')-uridine 925
Liu X. see Faller J. W. 3449
Liu Y.-T. see Saksena A. K. 6821
Liu Y.-T. see Saksena A. K. 5657
Liverton N. J. see Butcher J. W. 6685
Livesay M. T. see Sowell C. G. 609
Livingston P. O. see Takayama S. 9271
Llerena D. Aubert C. and Malacria M. First examples of cobalt-mediated formal Alder ene reaction of allenynes 7027
Llerena D. Aubert C. and Malacria M. Novel reactivity of enynes in presence of cobalt(I) complexes 7353
Lluís Torres J. see Pera E. 3609
Lo L.-C. see Blankenfeldt W. 7361
Loakes D. see Davies G. M. 5601
Lobkovsky E. see Harrison B. 9151
Lobkovsky E. see Lindquist N. 9131
Lobo A. M. see Aires-de-Sousa J. 3183
Locati L. see Bonadies F. 7129
Lochrie I. S. T. see Atkinson R. S. 5179
Lock R. and Waldmann H. Asymmetric synthesis of highly functionalized tetracyclic indole bases embodying the basic skeleton of yohimbine- and reserpine type alkaloids 2753
Locke A. J. and Richards C. J. Asymmetric synthesis of 1- and 1,1'-ferrocenepropanoic acids 7861
Loeb L. B. see López B. R. 5437
Loffet A. see Paris M. 8489
Loffet A. see Pothion C. 1027
Löfström C. M. G. and Bäckvall J.-E. BF_3-induced rearrangement of aziridinocyclopropanes derived from 2-phenylsulfonyl-1,3-dienes. A new approach to the tropane alkaloid skeleton 3371
Loganathan V. see Grigg R. 3399
Loh T.-P. Wang R.-B. and Sim K.-Y. Chiral tartrate-derived dioxaborolidine: a simple and practical catalyst for enantioselective Diels–Alder reaction 2989
Loh, Jr V. M. see Boyd E. A. 1647
Loh, Jr V. M. see Boyd E. A. 1651
Loing E. see Klinguer C. 7259
Lo Moro G. see Bellucci G. 4225
Lonergan D. G. Riego J. and Deslongchamps G. A convergent hydroxyimide module for molecular recognition 6109
Long B. H. see Kant J. 6495
Longeau A. Langer F. and Knochel P. Preparation and reactions of functionalized chlorodiorganophosphine–borane complexes using organozinc reagents 2209
Longeau A. and Knochel P. Lithiated bis(diethylamino)phosphine borane complex as useful nucleophilic phosphorus reagent 6099
Longoria M. A. see Doyle M. P. 4129
López B. R. Loeb L. B. Boussie T. and Meyer T. J. Synthesis of a new phenanthroline derived ligand with acceptor properties 5437
López J. C. see Valverde S. 1105
López J. L. see Caballero E. 6951
López J. L. see Medarde M. 2663
López-Alvarado P. see Pérez J. M. 6955
López-Calahorra F. Castro E. Ochoa A. and Martí J. Further evidences about the role of bis(thiazolin-2-ylidene)s as the actual catalytic species in the generalised benzoin condensation 5019
López-Ortiz F. see Álvarez-Gutiérrez J. M. 2841
López-Romero J. M. see Suau R. 9357
Lopp M. Paju A. Kanger T. and Pehk T. Asymmetric Baeyer–Villiger oxidation of cyclobutanones 7583
Lorber C. Y. and Osborn J. A. *cis*-Dioxomolybdenum(VI) complexes as new catalysts for the Meyer– Schuster rearrangement 853
Lorente A. Espinosa J. F. Fernández-Saiz M. Lehn J.-M. Wilson W. D. and Zhong Y. Y. Syntheses of imidazole–acridine conjugates as ribonuclease A mimics 4417
Loreto M. A. see Carducci M. 3777
Lorin C. see Mavratzotis M. 5699
Lorthiois E. Marek I. Meyer C. and Normant J. F. Intermolecular carbolithiation of silylated enynes 6689
Lorthiois E. Marek I. and Normant J. F. Intramolecular carbolithiation of silylated enynes 6693
Lotter H. see Dubois E. P. 3627
Lounasmaa M. Karinen K. Din Belle D. and Tolvanen A. Stereoselective synthesis of methyl 3α-ethyl-1,2,3,4,6,7,12,12bβ-octahydroindolo[2,3-*a*]quinolizine-1α-carboxylate: a key intermediate for the preparation of tacamine-type indole alkaloids 1513
Loupy A. Monteux D. Petit A. Aizpurua J. M.ª Domínguez E. and Palomo C. Towards the rehabilitation of the Leuckart reductive amination reaction using microwave technology 8177
Loupy A. and Monteux D. Asymmetric Diels–Alder: monobenzylated isosorbide and isomannide as highly effective chiral auxiliaries 7023
Loupy A. see de la Cruz P. 1113
Loupy A. see Díaz-Ortiz A. 1695

Louwrier S. Ostendorf M. Tuynman A. and Hiemstra H.
Studies towards the synthesis of guanidine alkaloids; synthesis of a tricyclic guanidine from succinimide 905
Lovell J. M. see Cooper M. M. 4283
Löwik D. W. P. M. Mulders S. J. E. Cheng Y. Shao Y. and Liskamp R. M. J.
Synthetic receptors based on peptidosulfonamide peptidomimetics 8253
Loyer N. and Roby J.
Corrigendum 3415
Lu L. see Xue L. 1921
Lu Q. and Agosta W. C.
A radical clock reaction in the photochemistry of an acylpyrazine 8629
Lu S.-P. see Petasis N. A. 141
Lu Y.-Q. and Li C.-J.
Novel [3 + 2] annulation via a trimethylenemethane zwitterion equivalent in water 471
Lu Z.-H. see Ramachandran P. V. 3795
Lubyako E. N. see Stetsenko D. A. 3571
Lucchini V. see Carofiglio T. 8019
Luccioni-Houzé B. see Salemi-Delvaux C. 5127
Lucet-Levannier K. Lellouche J.-P. Mioskowski C. Schneider F. and Cassagne C.
The hydrogenation of β-hydroxy-γ-fluoro-γ-ethylenic esters as an efficient approach to the fluorohydrin substructure 2007
Luis J. G. Lahlou E. H. Andrés L. S. Sood G. H. N. and Ripoll M. M.
Apiananes: C_{23} terpenoids with a new type of skeleton from *Salvia apiana* 4213
Luisi R. see Florio S. 4781
Luke R. W. A. Boyce P. G. T. and Dorling E. K.
'One-pot' methylation of Fmoc amino acids 263
Luker T. Hiemstra H. and Speckamp W. N.
Synthesis and reactivity of pyrrolidinone- and piperidinone-derived enol triflates 8257
Luker T. and Whitby R. J.
Organozirconium methods for the efficient construction of the bicyclo-[9.3.0]tetradecane dolabellane skeleton 7661
Luk'yanets E. A. see Barkanova S. V. 1637
Lumin S. see Heckmann B. 1425
Luna H. see Königsberger K. 9029
Luque F. J. see Camps P. 8605
Luu B. see Knerr L. 5123
Luzikova E. V. see Bumagin N. A. 897
Lynch J. E. see Wells K. M. 6439
Lynch V. see Gale P. A. 7881
Lynch V. see Magnus P. 6639
Lyngsø L. O. see Nielsen J. 8439

Ma P. see Zhang L. 4455
Ma S. see Lautens M. 1727
Ma W. see Moss R. A. 1929
Macaluso S. A. see Hungate R. W. 4113
Macaulay G. S. see Andrews I. P. 4811
Macchia F. see Crotti P. 1675
Macciantelli D. see Chatgilialoglu C. 6391
MacDonald A. A. DeWitt S. H. Hogan E. M. and Ramage R.
A solid phase approach to quinolones using the DIVERSOMER® technology 4815
Macdonald G. see Alcaraz L. 6619
Macdonald G. see Kapfer I. 2101
Macdonald T. L. see Guzi T. J. 2939
Macdonald T. L. see Hopper D. W. 7871
MacFaul P. A. see Snelgrove D. W. 823
Machado A. see Silveira C. C. 9173
Machetti F. Cordero F. M. De Sarlo F. Guarna A. and Brandi A.
A new synthesis of (2*S*)-4-oxopipecolic acid by thermal rearrangement of enantiopure spirocyclopropaneisoxazolidine 4205
Machida K. and Kikuchi M.
Viburnols: novel triterpenoids with a rearranged dammarane skeleton from *Viburnum dilatatum* 4157
Maciewjeski L. see Carpentier J.-F. 167
MacKinnon J. see Barton D. H. R. 8329
Macor J. E. Ogilvie R. J. and Wythes M. J.
An improved synthesis of the unique anti-migraine agent CP-122,288: a bromine atom passenger in an intramolecular Heck reaction 4289
Madalengoitia J. S. see Zhang R. 6235
Maddaluno J. see Martin C. 8169
Maddrell S. J. Turner N. J. Kerridge A. Willetts A. J. and Crosby J.
Nitrile hydratase enzymes in organic synthesis: enantioselective synthesis of the lactone moiety of the mevinic acids 6001
Madiot V. see Kermarrec C. 5691
Madura J. D. see Davis, Jr J. H. 2729
Maechler L. see Hirschmann R. 5637
Maeda H. Okamoto J. and Ohmori H.
Reactions of *in situ* formed acyl tributylphosphonium ions with Grignard reagents as an effective route to ketones from acid chlorides 5381
Maeda H. see Kraus G. A. 7245
Maeda M. see Sasaki S. 85
Maehr H. and Yang R.
A convergent synthesis of Ro24-5913, a novel leukotriene D_4 antagonist 5445
Mager H. I. X. and Tu S.-C.
Inter-flavin electron transfer in the ground state in the absence of external electron donors and acceptors 7885
Magnin G. C. Dauvergne J. Burger A. and Bielmann J.-F.
t-Butyldimethylsilyloxymethyl group, a versatile protecting group of adenine 7833
Magnus P. Ujjainwalla F. Westwood N. and Lynch V.
Isomerization, autoxidation and epimerization for the introduction of C-1 to C-5 functionality into the taxane ABC ring system 6639
Magnus P. and Roe M. B.
Oxidative azidonation of glycals using the reagent combination PhIO/ $TMSN_3$: synthesis of diaminopyrans 303
Magnus P. see Frost C. 9139
Magué J. see Ensley H. E. 6255
Maguire R. J. Mulzer J. and Bats J. W.
1,4-Asymmetric induction in the Nozaki–Hiyama reaction 5487
Mahadevan I. see Warrener R. N. 3773
Mahadevan S. see Ensley H. E. 6255
Mahesh Reddy G. Prasunamba P. L. and Reddy P. S. N.
Benzimidazoles to quinoxalines—a novel thermal rearrangement 3355
Mai N. see Calmes M. 379
Maidwell N. L. see Bloodworth A. J. 1885
Maier G. see Hong B. 583
Maignan C. see Hayes P. 3687

Maikap G. C. see Khanna V. 3367
Maiti S. Bhaduri S. Achari B. Banerjee A. K. Nayak N. P. and Mukherjee A. K. One-pot synthesis of optically pure tricyclo[5.3.1.$0^{3,8}$]-undecanes involving a novel triple Michael–Dieckmann reaction 8061
Maitra U. see Rao P. 5791
Majani J.-P. see Leriche P. 5115
Majee A. see Ranu B. C. 1109
Majo V. J. and Perumal P. T. Dimerization of substituted 2-aminobenzoic acids under Vilsmeier conditions: a novel route to the synthesis of 4-(3*H*)-quinazolinones 5015
Majoral J. P. see Slany M. 9053
Mak C. C. see Chow H.-F. 5935
Mak T. C. W. see Ng M.-K. 2979
Makabe H. see Konno H. 5393
Maki T. see Matsumura Y. 5715
Maki T. see Matsumura Y. 8063
Makihira I. see Kataoka Y. 7083
Makino K. Kimura K. Nakajima N. Hashimoto S. and Yonemitsu O. Toward the total synthesis of hygrolidin: stereocontrolled construction of the C1–C17 seco-acid fragment and the C18–C25 masked hemiacetal subunit 9073
Makino K. Nakajima N. Hashimoto S. and Yonemitsu O. Total synthesis of 16-membered tetraene macrolide hygrolidin 9077
Makioka Y. see Taniguchi Y. 3465
Maksimovic L. see Moss R. A. 5849
Maksimovic L. see Warrener R. N. 3773
Mal D. and Hazra N. K. The first approach to kinamycin antibiotics: synthesis of kinafluorenone scaffold 2641
Malacria M. see Llerena D. 7027
Malacria M. see Llerena D. 7353
Malacria M. see Thorimbert S. 8483
Malan C. Morin C. and Preckher G. Two reducible protecting groups for boronic acids 6705
Malara L. see Coudret J. L. 2425
Maldonado J. see Vanelle P. 3323
Malézieux B. see Blanalt S. 6561
Mallamo J. P. see Subramanyam C. 2315
Mallamo J. P. see Subramanyam C. 459
Mallik A. K. see Dhara M. G. 8001
Mallory C. W. see Mallory F. B. 7173
Mallory F. B. Butler K. E. Evans A. C. and Mallory C. W. Phenacenes: a family of graphite ribbons—I. Syntheses of some [7]phenacenes by stilbene-like photocyclizations 7173
Mallouk T. E. see Garcia M. E. 8313
Malmquist J. see Tjarks W. 6905
Malpart J. see Mutti S. 8743
Malpass J. R. Hemmings D. A. and Wallis A. L. Synthesis of epibatidine homologues: homoepibatidine and bis-homoepibatidine 3911
Malusare M. G. see Pansare S. V. 2859
Mamer O. see Zamir L. O. 6435
Man H.-W. see Jadhav P. K. 1153
Mancini I. see N'Diaye I. 3049
Mandal A. K. Khanna V. and Iqbal J. Cobalt(II) porphyrin: a versatile catalyst for the oxidation of organic substrates with dioxygen and 2-methyl propanal 3769
Mandelli D. see Schuchardt U. 6487
Mander L. N. and Owen D. J. Structure determination and synthesis of a new gibberellin, GA_{99}, from spinach plants: 2β-hydroxy-GA_{19} 723
Mander L. N. and Sherburn M. S. Unexpected C-arylation of a gibberellin: a cautionary note on the radical deoxygenation of homoallylic secondary alcohols 4255
Mander L. N. see Benjamin L. J. 8937
Mander L. N. see Bhaskar K. V. 719
Mandville G. see Girard C. 63
Manfredini S. see Kozikowski A. P. 5333
Mangalagiu I. Benneche T. and Undheim K. Trialkylalanes in palladium-catalyzed chemo- and regioselective alkylations 1309
Mangeney P. see Raussou S. 1599
Mangoni A. see Cafieri F. 3587
Mangoni L. see Adinolfi M. 5987
Manhas M. S. see Banik B. K. 1363
Manhas M. S. see Bose A. K. 6989
Manitto P. see Speranza G. 4247
Mann A. Quaranta L. Reginato G. and Taddei M. A general synthesis of oligopeptides containing an oxirane ring in the place of a peptidic bond 2651
Mann A. see Schneider M.-R. 8493
Mann I. S. see Bell D. 3895
Manning D. D. Bertozzi C. R. Rosen S. D. and Kiessling L. L. Tin-mediated phosphorylation: synthesis and selectin binding of a phospho Lewis a analog 1953
Manning D. D. see Schueller C. M. 8853
Manoharan M. Ramasamy K. S. Mohan V. and Cook P. D. Oligonucleotides bearing cationic groups: N^2-(3-aminopropyl)-deoxyguanosine. Synthesis, enhanced binding properties and conjugation chemistry 7675
Mansuy D. see Boucher J.-L. 3113
Manteca I. Sotomayor N. Villa M.-J. and Lete E. Tandem carbophilic addition–*N*-acyliminium ion cyclization for the synthesis of functionalized pyrrolo[2,1-*a*]isoquinolones: key intermediates for the preparation of *erythrina*-type alkaloids 7841
Mantick N. A. see Gough G. R. 981
Mantoulidis A. see Mulzer J. 9179
Manuel G. see Mirza-Aghayan M. 3109
Manwell J. J. see Galatsis P. 5261
Manzano P. see Fernández de la Pradilla R. 6793
Marais C. Steenkamp J. A. and Ferreira D. The occurrence of phenylpyruvic acid in woody plants: biosynthetic significance 5763
Maranto M. T. see Sclafani J. A. 2193
Marcantoni E. see Bartoli G. 2293
Marcantoni E. see Bartoli G. 7421
Marchand A. P. Kumar K. A. Rajagopal D. Eckrich R. and Bott S. G. Generation and trapping of a

caged cyclopentylidene-carbene 467
Marchand A. P. Ramanaiah K. C. V. Bott S. G. Gilbert J. C. and Kirschner S. Generation and trapping of *N*-substituted-3-azetidinylidene-carbenes 8101
Marchand A. P. see Moss R. A. 5849
Marchand-Brynaert J. see Vanwetswinkel S. 2761
Marchese G. see Fiandanese V. 8455
Marchesini G. see Brands K. M. J. 2919
Marchionni C. Vogel P. and Roversi P. The simultaneous double Diels–Alder addition of 1,1-bis(3,5-dimethylfur-2-yl)ethane; toward a new, asymmetric synthesis of long-chain polypropionate fragments and analogues 4149
Marcos I. S. see Urones J. G. 1659
Marcotullio M. C. see Cabri W. 4785
Marder R. Bricard L. Dubois J. Guénard D. and Guéritte-Voegelein F. Taxoids: 11,12-dihydro-4-deacetyldocetaxel 1777
Marek D. Wadouachi A. Uzan R. Beaupere D. Nowogrocki G. and Laplace G. A facile route to diastereomerically pure analogues of castano-spermine and australine 49
Marek I. see Bähr A. 5873
Marek I. see Lorthiois E. 6689
Marek I. see Lorthiois E. 6693
Marek I. see Meyer C. 857
Marek R. Sklenár V. Dostál J. and Slavík J. Determination of a symmetrical dimer structure in benzo[*c*]phenanthridine alkaloids by pulsed-field-gradient HMBC 1655
Margan S. see Patney H. K. 4621
Margarita R. see De Mico A. 1889
Margolin A. L. see Persichetti R. A. 6507
Margolin A. L. see Wang Y.-F. 5317
Mariani A. see De Mico A. 1889
Mariano P. S. see Khim S.-K. 571
Marinelli F. see Arcadi A. 3387
Marinic Z. see Mlinaric-Majerski K. 4829
Marino J. P. Anna L. J. Fernández de la Pradilla R. Martínez M. V. Montero C. and Viso A. Sulfoxide-controlled S_N2' displacements between cyanocuprates and epoxy vinyl sulfoxides 8031
Markó I. E. Murphy F. and Dolan S. Efficient preparation of trisubstituted alkenes using the Julia–Lythgoe olefination of ketones. On the key-role of SmI_2 in the reductive elimination step 2089
Markó I. E. Murphy F. and Dolan S. Efficient synthesis of the left-hand subunit of milbemycin β3 using a Suzuki coupling reaction 2507
Markus A. see Kempin U. 5087
Marquais S. and Arlt M. Aryl–aryl cross coupling on a solid support using zinc organic reagents and palladium catalysis 5491
Marquais S. see Cahiez G. 1773
Marques D. see Suda Y. 1053
Marquet J. see Cervera M. 7591
Marquez V. E. see Jeong L. S. 2353
Marquis C. see Frérot E. 2023
Marquis D. see Henze B. 5499
Marraud M. see André F. 183
Marron K. S. see Bennani Y. L. 8109
Marron T. G. Woltering T. J. Weitz-Schmidt G. and Wong C.-H. *C*-Mannose derivatives as potent mimics of sialyl Lewis X 9037
Marsaioli A. J. see de Oliveira C. M. A. 6427
Marsau P. see Henze B. 5499
Marsault E. and Just G. Diastereoselective synthesis of phosphite triesters through a new bicyclic intermediate 977
Marshall P. S. see Lane S. J. 1
Marshall R. L. see Cokley T. M. 1905
Marsmann H. see Kroke E. 3675
Marsura A. see Sallas F. 4011
Martelli G. see Bandini E. 4409
Martens J. see Gröger H. 9291
Martens J. see Peper V. 8351
Martí J. see López-Calahorra F. 5019
Martin A. Jouannetaud M.-P. Jacquesy J.-C. and Cousson A. Synthesis of atropoisomeric fluorocyclohexadienones by *ipso*-fluorination of binaphthol derivatives 7735
Martin A. Jouannetaud M.-P. and Jacquesy J.-C. Fluorination or hydroxylation of non activated C–H bonds in amides and ketones using CCl_4 or NBS in superacids 2967
Martin A. Jouannetaud M.-P. and Jacquesy J.-C. Dehydrogenation of polycyclic ketones using trichloromethyl cation in superacid 7731
Martín A. see Dorta R. L. 6021
Martin C. Maddaluno J. and Duhamel L. Synthesis and Diels–Alder reactivity of functionalized aminodienes and bis-dienes 8169
Martin H. J. see Mulzer J. 9177
Martín J. D. see Alvarez E. 2865
Martín J. D. see Ravelo J. L. 2869
Martin L. M. Facile reduction in the synthesis of phosphoryl-choline affinity columns 7921
Martín M. see Raposo C. 1485
Martín M. see Raposo C. 6947
Martin M. T. see Bourguet-Kondracki M. L. 3457
Martín N. Sánchez L. Seoane C. Andreu R. Garín J. and Orduna J. Semiconducting charge transfer complexes from [60]fullerene–tetrathiafulvalene (C_{60}–TTF) systems 5979
Martín N. see de Lucas A. I. 9391
Martín N. see Segura J. L. 2503
Martin O. R. Liu L. and Yang F. An efficient synthetic approach to aza-*C*-glycosyl compounds. Application to the synthesis of an aza-*C*-disaccharide 1991
Martín Castro A. M. see García Ruano J. L. 4569
Martinelli M. J. see Hutchison D. R. 2887
Martinelli M. J. see Khau V. V. 4323
Martinez B. L. see Benbow J. W. 8829
Martinez F. N. see Tronche C. 5845
Martinez J. see Gouilleux L. 7031
Martinez J. see Paris M. 8489
Martinez J. see Pothion C. 1027
Martínez M. see Alvarez-Ibarra C. 6573
Martínez M. E. see Méndez J. M. 4099
Martínez M. V. see Marino J. P. 8031
Martinez R. L. see McGee D. P. C. 1995
Martínez R. V. see Godjoian G. 433
Martínez-Bernhardt R. see Godjoian G. 433

Martínez-Ripoll M. see Fernández de la Pradilla R. 6793
Martín-Lomas M. see Alonso I. 1477
Martín-Lomas M. see Espinosa J.-F. 1467
Martín-Martínez M. García-López Mª T. Herranz R. and González-Muñiz R. Synthesis of highly functionalized γ-lactam derivatives for use as conformational constraints in peptides 2471
Martins M. A. P. see Bonacorso H. G. 9155
Martín-Zamora E. see Lassaletta J. M. 5787
Martres P. see Chauvet F. 3695
Maruo M. see Taniguchi Y. 3465
Maryanoff B. E. Zhang H.-C. Greco M. N. Zhang E. Vanderhoff-Hanaver P. and Tulinsky A. Transformation of the marine natural product cyclotheonamide A by aqueous base. X-Ray analysis of a novel ligand complexed with human α-thrombin 3667
Maryanoff B. E. see Zhang H.-C. 7897
Maryanoff C. A. see Zhang H.-C. 7897
Marziano N. C. see Riego J. M. 513
Marzinzik A. L. and Felder E. R. Solid support synthesis of highly functionalized pyrazoles and isoxazoles; scaffolds for molecular diversity 1003
Masaguer C. F. and Raviña E. A practical and efficient route for synthesis of 6-aminomethyl-4-oxo-4,5,6,7-tetrahydroindoles as new CNS agent precursors 5171
Masaki Y. Yoshizawa K. and Itoh A. Total synthesis of thromboxane B_2 starting from (*R,R*)-tartaric acid as a chiral pool 9321
Masalov N. see Kulinkovich O. 1095
Masamune S. see Abiko A. 1077
Masamune S. see Abiko A. 1081
Mascal M. Hext N. M. and Shishkin O. V. Azatriquinane, azatriquinacene, and a remarkable dimerization product 131
Mascal M. Richardson J. L. Blake A. J. and Li W.-S. Molecular structure of the *s*-triazine–Br_2 complex 3505
Mascaretti O. A. see Danelon G. O. 4431
Mascaretti O. A. see Furlán R. L. E. 5229
Masciadri R. see Alzeer J. 6857
Masereel B. Lebrun P. Dogné J. M. de Tullio P. Pirotte B. Pochet L. Diouf O. and Delarge J. First synthesis of 4-substituted benzenesulfonylcyanoguanidines 7253
Mashio H. see Sano H. 8891
Masojídková M. see Endová M. 3497
Mason J. C. see Strekowski L. 4655
Massa A. see Izzo I. 4775
Mastalerz H. Doyle T. W. Kadow J. F. and Vyas D. M. Synthesis of an esperamicin core analog with an epoxide trigger 8683
Mastalerz H. Doyle T. W. Kadow J. F. and Vyas D. M. Synthesis of a hybrid analog of the esperamicin and dynemicin cores 8687
Master H. E. Newadkar R. V. Rane R. A. and Kumar A. Highly efficient enzymatic resolution of homoallyl alcohols leading to a simple synthesis of optically pure fluoxetine and related compounds 9253
Mastrocola A. R. see Fortunak J. M. D. 5679
Mastrocola A. R. see Fortunak J. M. D. 5683
Mastrorilli P. see Ravasio N. 3529
Masuda K. see Arai Y. 4381
Masui Y. see Mori H. 7771
Masumoto K. see Kobayashi M. 3005
Masuyama Y. Kishida M. and Kurusu Y. γ-*syn*-Selective carbonyl allylation by 1-bromo-2-butene with tin(II) iodide and tetrabutylammonium bromide 7103
Mata E. G. see Danelon G. O. 4431
Mata E. G. see Furlán R. L. E. 5229
Mataka S. Mitoma Y. Sawada T. and Tashiro M. Triple-layered orthonaphtho-[3.3]orthobenzeno[3.3]orthonaphthophane 65
Matheu M. see Farràs J. 901
Mathew T. Keller M. Hunkler D. and Prinzbach H. [6 + 6]-Photocycloadditions in 'face-to-face' benzo/pyridazino systems en route to azapagodanes (azadodecahedranes) 4491
Mathews J. E. see Jones G. B. 3643
Mathieu H. see Agami C. 4001
Mathivanan P. see Ghosh A. K. 3815
Mathur R. K. see Bordoloi M. 6791
Matloubi Moghaddam F. and Ghaffarzadeh M. Rapid dehydrosulfenylation of sulfoxides under microwave irradiation 1855
Matsubara J. see Matsumoto M. 397
Matsubara J. see Matsumoto M. 5939
Matsuda A. see Nishizono N. 7569
Matsuda A. see Ono S. 221
Matsuda A. see Shuto S. 187
Matsuda A. see Shuto S. 641
Matsuda A. see Takahashi T. 2433
Matsuda C. see Takahashi C. 655
Matsuda H. see Ishida K. 9225
Matsuda H. see Okada S. 1065
Matsuda S. see Sugiyama H. 9067
Matsuda T. see Nakamura K. 1629
Matsuda T. see Nakamura K. 5727
Matsugi T. see Hamachi I. 9233
Matsui M. see Katsuyama I. 4177
Matsukura H. see Morimoto M. 6365
Matsukura H. see Nakata T. 213
Matsukura H. see Nakata T. 217
Matsumori N. Nonomura T. Sasaki M. Murata M. Tachibana K. Satake M. and Yasumoto T. Long-range carbon–proton coupling constants for stereochemical assignment of acyclic structures in natural products: configuration of the C5–C9 portion of maitotoxin 1269
Matsumoto A. see Suginome M. 8887
Matsumoto H. and Shinkai S. Metal-induced conformational change in pyrene-appended calix[4]crown-4 which is useful for metal sensing and guest tweezing 77
Matsumoto K. see Seki M. 3165
Matsumoto M. Arai N. and Watanabe N. 3-(4-Acyl-3-hydroxyphenyl)-1,2-dioxetanes as a chemiluminescent substrate with high efficiency in an aqueous system 8535
Matsumoto M. Kitano Y. Kobayashi H. and Ikawa H.

Singlet oxygenation of 1-aminomethyl-1-*tert*-butyl-2-methoxy-2-(3-methoxyphenyl)ethylenes: marked effect of allylic nitrogen on the reaction pathways and chemoselectivity 8191
Matsumoto M. Kobayashi H. Matsubara J. Watanabe N. Yamashita S. Oguma D. Kitano Y. and Ikawa H. Effect of allylic oxygen on the reaction pathways of singlet oxygenation: selective formation of 1,2-dioxetanes from 1-alkoxymethyl-2-aryl-1-*tert*-butyl-2-methoxyethylenes 397
Matsumoto M. Watanabe N. Kobayashi H. Suganuma H. Matsubara J. Kitano Y. and Ikawa H. Synthesis of 3-alkoxymethyl-4-aryl-3-*tert*-butyl-4-methoxy-1,2-dioxetanes as a chemiluminescent substrate with short half-life emission 5939
Matsumoto T. see Hosoya T. 663
Matsumoto T. see Takahashi T. 2433
Matsumoto T. see Yamamoto Y. 7801
Matsumoto Y. see Mikami K. 8515
Matsumoto Y. see Shimizu I. 7115
Matsumoto Y. see Ueoka R. 3461
Matsumoto Y. see Ueoka R. 3461
Matsumura S. see Toshima K. 1069
Matsumura S. see Toshima K. 1073
Matsumura Y. Kinoshita T. Yanagihara Y. Kanemoto N. and Watanabe M. New synthetic method of optically active α-methylproline and α-methylpipecolinic acid using electrochemical oxidation as a key reaction 8395
Matsumura Y. Yoshimoto Y. Horikawa C. Maki T. and Watanabe M. Regio- and stereo-selective introduction of a bis(methoxycarbonyl)methyl group into the γ-position of the piperidine skeleton 5715
Matsumura Y. Yoshimoto Y. Horikawa C. Maki T. and Watanabe M. Corrigendum 8063
Matsunaga K. Saitoh M. and Ohizumi Y. Acanthostral, a novel antineoplastic *cis, cis, cis*-germacranolide from *Acanthospermum australe* 1455
Matsunaga N. see Fujioka H. 2245
Matsunaga S. see Fukuzawa S. 1447
Matsunaga S. see Suginome M. 8887
Matsunaga S. see Ushio-Sata N. 225
Matsuo I. Isomura M. Walton R. and Ajisaka K. A new strategy for the synthesis of the core trisaccharide of asparagine-linked sugar chains 8795
Matsuoka R. T. see Flisak J. R. 4639
Matsuoka T. see Eto M. 2445
Matsushima T. Horita K. Nakajima N. and Yonemitsu O. Synthetic studies of 18-membered anti-tumor macrolide, tedanolide. Computer-aided conformational design of a *seco*-acid derivative for efficient macrolactonization 385
Matsushita K. see Miki Y. 7753
Matsuya Y. see Itoh T. 4165
Mattalia J.-M. Berchadsky Y. Péralez E. Négrel J.-C. Tordo P. and Chanon M. Occurence of a radical intermediate during the reductive decyanation of an α-sulfonitrile with $LiAlH_4$ 4717
Mattalia J.-M. see Hada C. 3845
Mattay J. see Averdung J. 4683
Mattay J. see Buhr S. 1195
Mattay J. see Hintz S. 7349
Mattern R.-H. Synthesis of N-substituted pyrrolin-2-ones 291
Matteucci M. D. and von Krosigk U. Hybridization properties of oligonucleotides bearing a tricyclic 2'-deoxycytidine analog based on a carbazole ring system 5057
Matteucci M. D. see Lin K.-Y. 8667
Matteucci M. D. see Zou R. 941
Mattner P. G. see Xu D. 5301
Matulic-Adamic J. and Beigelman L. Synthesis of 1-deoxy-1-*C*-(*p*-aniline)-β-D-ribofuranose and its incorporation into hammerhead ribozymes 6973
Maume D. see Negriolli J. 5365
Maumy M. see Rousselet G. 8497
Maurer M. see Linker T. 8363
Mauriello G. see D'Auria M. 8217
Maurin R. see Charrouf-Chafchaouni Z. 5099
Maurizis J. C. see Contino C. 9049
Mävers U. see Patil V. J. 1281
Mavratzotis M. Dourtoglou V. Lorin C. and Rollin P. Glucosinolate chemistry. First synthesis of glucosinolates bearing an external thio-function 5699
Mavropoulos I. and Perlmutter P. The total synthesis of pamamycin 607—I. Synthesis of a C1'–C11' synthon 3751
Mayer G. Wille G. and Steglich W. Total synthesis of arcyroxocin A 4483
Mayer J. P. Bankaitis-Davis D. Zhang J. Beaton G. Bjergarde K. Andersen C. M. Goodman B. A. and Herrera C. J. Application of the Pictet–Spengler reaction in combinatorial chemistry 5633
Mayer J. P. Zhang J. Bjergarde K. Lenz D. M. and Gaudino J. J. Solid phase synthesis of 1,4-benzodiazepine-2,5-diones 8081
Mayer S. and Prandi J. Oxygenative radical cyclization with molecular oxygen 3117
Mayes N. see Spino C. 6503
Mayoral J. A. see Fraile J. M. 5995
Mazaleyrat J.-P. Gaucher A. Wakselman M. Tchertanov L. and Guilhem J. A new chiral α-aminoacid with only axial dissymmetry: synthesis and X-ray analysis of a 1,1'-binaphthyl-substituted α-aminoisobutyric acid (Bin) and of its biphenyl analogue (Bip) 2971
Mazhukin D. G. see Khlestkin V. K. 5997
Mazières M.-R. see Rivière F. 6717
McAlonan H. Montgomery D. and Stevenson P. J. Approaches to diene based homopumiliotoxin alkaloids 7151
McAuliffe J. C. Stick R. V. and Stone B. A. 'β-Acarbose': a potential inhibitor of β-D-glucosidases and β-D-glucan hydrolases 2479
McCague R. see Morgan P. E. 4795
McCague R. see Palmer C. F. 4601
McCarthy J. R. see Kim K.-I. 3223

McCarthy S. J. see Galt R. H. B. 8035
McCarthy T. J. see Mishani E. 319
McClure C. K. Herzog K. J. and Bruch M. D. Structure determination of the Diels–Alder product of a ketovinylphosphonate with *E*-1-acetoxy-1,3-butadiene 2153
McClure C. K. and Hansen K. B. Diels–Alder reactivity of a ketovinylphosphonate with cyclopentadiene and furan 2149
McClure L. D. see Wright S. W. 4631
McClure L. D. see Wright S. W. 6965
McCluskey A. see Cokley T. M. 1905
McCombie S. W. see Shankar B. B. 4095
McCombie S. W. see Tagat J. R. 8459
McCombie S. W. see Tagat J. R. 8463
McConnell D. B. see Black D. StC. 241
McCort I. Duréault A. and Depezay J.-C. Practical route to D-manno and D-gluco azasugars from C_2 symmetric bis-aziridines 7717
McCullough K. J. see Ushigoe Y. 2093
McDonald F. E. and Bowman J. L. Tungsten carbonyl-induced cyclizations of alkynyl alcohols to dihydropyranylidene carbenes and α-stannyl dihydropyrans 4675
McDonald J. C. see Fry D. F. 6227
McEachern E. J. see Piers E. 1173
McGarvey G. J. Stepanian M. W. Bressette A. R. and Ellena J. F. *cis*- and *trans*-1,7,9-Trioxadispiro[5.1.5.3]hexadecane: stability studies and solution structures 5465
McGarvey G. J. and Stepanian M. W. *cis*- and *trans*-1,7,9-Trioxadispiro[5.1.5.3]hexadecane: synthetic studies 5461
McGee D. P. C. Sebesta D. P. O'Rourke S. S. Martinez R. L. Jung M. E. and Pieken W. A. Novel nucleosides via intramolecular functionalization of 2,2'-anhydrouridine derivatives 1995
McGill J. M. LaBell E. S. and Williams M. Hydride reagents for stereoselective reductive amination. An improved preparation of 3-*endo*-tropanamine 3977
McGrath D. V. Wu M.-J. and Chaudhry U. An approach to highly functionalized dendrimers from chiral, non-racemic synthetic monomers 6077
McKee T. C. see Bokesch H. R. 3259
McKerlie L. A. see Crimmins M. T. 8703
McKerrecher D. see Charoenying P. 1913
McKerrecher D. see Graham A. E. 7445
McKervey M. A. see Doyle M. P. 4129
McKervey M. A. see Fanni S. 7975
McKiernan M. T. and Heaney F. Chemoselective formation of symmetrically linked bisisoxazole units: steps toward isoxazoline/isoxazolidine based macrocycles 4597
McLaughlin J. L. see Zeng L. 5449
McLaughlin M. L. see Dávila A. 2517
McLaughlin M. L. see Sánchez Peña M. 5841
McLean K. see Creary X. 579
McLean S. see Henry G. E. 8663
McMills M. C. Wright D. L. Zubkowski J. D. and Valente E. J. Facile generation of aziridines from the reaction of α-diazoamides with tethered oximino-ethers 7205
McMills M. C. see Chappie T. A. 6523
McMills M. C. see Wright D. L. 2165
McMurray J. S. see Wang W. 6661
McNicholas C. Simpson T. J. and Willett N. J. Enantioselective synthesis of fusarentin methyl ethers: insecticidal metabolites of *Fusarium larvarum* 8053
McPartlin M. see Warren S. 5609
McPhail C. L. see Cory R. M. 1983
McPhail C. L. see Cory R. M. 1987
McWilliams J. C. see Molander G. A. 7197
Mechnich O. and Kessler H. Synthesis of axinastatins 2–5 5355
Medarde M. Ramos A. C. Caballero E. López J. L. Peláez-Lamamié de Clairac R. and San Feliciano A. A new approach to the synthesis of podophyllotoxin based on epimerization reactions 2663
Medarde M. see Caballero E. 6951
Médebielle M. Aromatic N–N exchange reactions of *N,N*-dimethylamino *gem*-difluorinated heterocycles. A convenient synthesis of new 5-imidazol-1-yl α,α-difluoroketones 5119
Medforth C. J. see Kozyrev A. N. 747
Meguro M. Kamijo S. and Yamamoto Y. Palladium catalyzed intramolecular hydrocarbonation of allenes leading to carbocycles 7453
Mehrman S. J. see Takacs J. M. 2749
Mehrotra A. P. and Gani D. Synthesis of functionalised cyclic pentapeptide analogues of the serine– threonine protein phosphatase inhibitor nodularin 6915
Mehta G. Reddy K. S. and Kunwar A. C. A concise entry into the bicyclo[6.4.0]dodecane system present in taxanes. Regioselective Haller–Bauer cleavage in tricyclo-[8.2.1.$0^{2,9}$]tridecan-13-ones 2289
Mehta G. and Ravikrishna Ch. Base catalyzed pentacyclo-[4.3.0.$0^{2,4}$.$0^{3,8}$.$0^{5,7}$]nonan-9-one (norsnoutanone) → tricyclo[3.2.1.$0^{2,7}$]octane transformation: a higher order fragmentation? 2655
Mehta G. and Sengupta S. An expeditious synthesis of 4-aryl-γ-butyrolactones, -furan-2(5*H*)-ones and -5-alkoxyfuran-2(5*H*)-ones via Heck-reaction of arenediazonium salts with 2,5-dihydrofuran 8625
Mehta G. and Uma R. An exceptionally simple and convenient method for dethioacetalization 1897
Mei X. see Halterman R. L. 6291
Meidine M. F. see Benito A. M. 1085
Meier H. and Dullweber U. Bis(stilbenyl)squaraines—novel pigments with extended conjugation 1191
Meier H. see Cao D. 4487
Meinwald J. see Glisan King A. 2141
Meinwald J. see Rydberg D. B. 1129

Mekonnen B. see Lai J.-Y. 7167
Meldal M. see Renil M. 6185
Meléndez-Rodríguez M. see Joseph-Nathan P. 8093
Mellinger M. see Fortunak J. M. D. 5679
Mellinger M. see Fortunak J. M. D. 5683
Mellinger M. see Sisko J. 8113
Mello R. see Asensio G. 2299
Mellor J. M. Merriman G. D. Rataj H. and Reid G. Direct synthesis of 3,4-dihydro-2*H*-pyrido[1,2-*a*]pyrimidines by addition reactions with 2-amino-pyridines 2615
Mellor J. M. and Rataj H. A general route to cyclic amidines and isothioureas based on formal aza Diels–Alder reactions of aminoheterocycles 2619
Melnyk O. see Klinguer C. 7259
Melnyk P. see Bourel L. 4145
Memoli K. A. A convenient preparation of 3-mercaptopicolinic acid 3617
Mendelson W. L. see Flisak J. R. 4639
Mendenhall G. D. see Jin D. 4881
Méndez J. M. Flores B. León F. Martínez M. E. Vázquez A. García G. A. and Salmón M. A new synthesis of monosubstituted succinaldehydes and 3-substituted pyrroles from acetonitriles. Formal synthesis of 2,3-dihydro-7-methyl-2*H*-pyrrolizidin-1-one (Danaidone), a semiochemical of Danaid butterflies 4099
Menéndez J. C. see Pérez J. M. 6955
Ménez A. see Hammadi A. 3309
Meng Q. see Hanessian S. 9001
Menger F. M. and Chen X. Y. Synthesis of a double-phospholipid 323
Menger F. M. see Binder W. H. 8963
Menger F. M. see West C. A. 9135
Menichincheri M. see Pinciroli V. 9365
Menzek A. see Balcı M. 921
Menzer S. see Ashton P. R. 6217
Menzer S. see Fonte P. 6205
Menzer S. see Kohnke F. H. 4593
Merckling F. A. and Rüedi P. Diastereoselectivity in nucleophilic displacement reactions at phosphorus; isolation and characterization of a pentacoordinated intermediate 2217
Mereyala H. B. see Krishnudu K. 6007
Mergelsberg I. see Gala D. 8117
Mérour J.-Y. see Desarbre E. 43
Merriman G. D. see Mellor J. M. 2615
Méry J. see Sola R. 9195
Messeguer A. see Ferrer M. 3585
Meth-Cohn O. and Cheng Y. The Vilsmeier formylation of *N*-(4-tolyl)pyrrolidine, -piperidine and -perhydroazepine: further examples of the '*t*-amino effect' 2679
Meth-Cohn O. and Goon S. Synthetic applications of umpoled Vilsmeier reagents—a new simple one-pot route to isatins from formanilides 9381
Metz P. Seng D. and Plietker B. Desulfurization of sultones with simultaneous methylenation 3841
Metzner P. see Alayrac C. 4507
Meunier S. J. and Roy R. Polysialosides scaffolded on *p-tert*-butylcalix[4]arene 5469
Meutermans W. D. F. and Alewood P. F. A simple and effective procedure for the synthesis of the 'difficult' phosphotyrosine-containing peptide Stat 91 (695-708) 4765
Meyer A. see Kermarrec C. 5691
Meyer C. Marek I. and Normant J.-F. Stereoselective synthesis of linear and angular triquinanes skeletons via the zinca-ene-allene reactions 857
Meyer C. Piva O. and Pete J.-P. Competition between intramolecular [2 + 2] photocycloaddition and hydrogen-abstraction reactions from 2-carboxamidocyclopent-2-enones 5885
Meyer C. see El Kaim L. 375
Meyer C. see Lorthiois E. 6689
Meyer M. and Guyot M. Synthesis of 2-substituted indolo pyridin-4-ones 4931
Meyer T. J. see López B. R. 5437
Meyers A. I. and Novachek K. A. Pd-Mediated cross-coupling of aryl, alkenyl, and alkynyl stannanes with chiral 2-bromo oxazolines 1747
Meyers A. I. and Willemsen J. J. An asymmetric synthesis of (+)-apogossypol hexamethyl ether 791
Meyers A. I. see Novachek K. A. 1743
Meyers A. I. see Pryde D. C. 3243
Mi L. see Hoye T. R. 3097
Miao G. see Superchi S. 6057
Miao G. see Superchi S. 6061
Michael J. P. de Koning C. B. and Stanbury T. V. A versatile synthesis of tricyclic analogues of quinolone antibacterial agents: use of a novel Reformatsky reaction 9403
Michael K. and Kessler H. Michael-type additions in the synthesis of α-*O*- and -*S*-2-deoxyglycosides 3453
Michalak K. Stepanenko W. and Wicha J. New diastereoselective approach to *trans*-hydrindane derivatives. Synthesis of an 8-phenylsulphonyl-A,B-descholestane derivative, a precursor to 25-hydroxyvitamin D_3 7657
Mickelson J. W. see Romero A. G. 2361
Mickevicius V. and Bylinskaite J. Synthesis of 1-aryl-2-methyl-3-ethoxycarbonyl-1,4,5,6-tetrahydro-4(1*H*)-pyridones and their derivatives 3489
Micouin L. Quirion J.-C. and Husson H.-P. Asymmetric synthesis—XL. 2,3-Disubstituted piperidines via chiral non-racemic lactams 849
Micskei K. see Kovács G. 1293
Middleton D. S. see Robertson J. 3411
Middleton P. J. see Wang G. 2739
Mierzwa R. see Chu M. 3943
Mierzwa R. see Chu M. 7229
Miesch-Gross L. see Franck-Neumann M. 8763
Mihara S. see Kita Y. 1817
Mikami K. and Kishino H. Silyl triflate-catalyzed oxonium-ene reaction of lactol allylic ethers: a new and stereocontrolled route to substituted oxygen heterocycles 3705
Mikami K. Yoshida A. and Matsumoto Y. Catalytic asymmetric carbonyl–ene reactions with alkynylogous and vinylogous glyoxylates: application to controlled synthesis of chiral isocarbacyclin analogues 8515

Miki S. Kitao M. and Fukunishi K. Introduction of two benzyl groups to C_{60} by using the Collman reagent 2049
Miki T. see Kitamura M. 5141
Miki Y. Tada Y. Yanase N. Hachiken H. and Matsushita K. Reaction of indole-2,3-dicarboxylic anhydride with (3-bromo-4-pyridyl)triisopropoxytitanium: synthesis of ellipticine 7753
Mikló K. Jaszberenyi J. Cs. Kádas I. Árvai G. and Töke L. Direct and indirect radical denitrations of intermediates in the synthesis of sorgolactone and its nuclear analogs 3491
Milat M.-L. see Ducrot P.-H. 3121
Miles W. H. Berreth C. L. and Anderton C. A. The ene reaction of 3-methylene-2,3-dihydrofuran with aldehydes 7893
Milgrom L. R. and Yahioglu G. *trans*-Disubstituted *meso*-tetraethynylporphyrins 4069
Milic D. R. see Solaja B. A. 3765
Millan S. D. see Galatsis P. 5261
Millburn K. see Less S. L. 3515
Miller A. K. see Zhao S.-H. 4463
Miller A. V. see Ding C. Z. 4447
Miller B. see Ionescu D. 1559
Miller J. F. and Spaltenstein A. Formation and isolation of simple, stable, acyclic di- and tripeptide hemiacetals 2521
Miller M. J. see Zhang D. 3799
Miller R. A. Li W. and Humphrey G. R. A ruthenium catalyzed oxidation of steroidal alkenes to enones 3429
Miller R. D. see Audia J. E. 4121
Miller T. J. see Gough G. R. 981
Millot N. see Guillou C. 4515
Mills G. see Shaw-Ponter S. 1867
Mills K. see Beddoes R. L. 9119
Mills K. see Gilbert P. 9115
Mimaki Y. Kuroda M. Sashida Y. Hirano T. Oka K. Dobashi A. Koshino H. and Uzawa J. Three novel rearranged cholestane glycosides from *Ornithogalum saundersiae* bulbs and their cytostatic activities on leukemia HL-60 and MOLT-4 cells 1245
Mimura N. see Ibuka T. 2849
Minami H. see Fukuyama Y. 6767
Minami T. see Ichikawa J. 8799
Mincione E. see Saladino R. 2647
Minegishi T. see Ikeda H. 4377
Minguez J. M. Vaquero J. J. García-Navio J. L. and Alvarez-Builla J. Improved synthesis of pyrrolo[1,2-*c*]pyrimidine and derivatives 4263
Minisci F. see Araneo S. 6897
Minisci F. see Araneo S. 7425
Mink D. and Deslongchamps G. A novel scaffold for the modular assembly of receptor models 7035
Minoura K. see Takahashi C. 655
Mintz E. A. see Bu X. R. 7331
Minutolo F. Pini D. and Salvadori P. Polymer-bound chiral (salen)Mn(III) complex as heterogeneous catalyst in rapid and clean enantioselective epoxidation of unfunctionalised olefins 3375
Mion L. see Collet H. 9043
Mioskowski C. see Heckmann B. 1421
Mioskowski C. see Heckmann B. 1425
Mioskowski C. see Lucet-Levannier K. 2007
Mioskowski C. see Nuss S. 5705
Mioskowski C. see Schlama T. 7047
Miranda M. A. see Pérez-Prieto J. 4923
Mironov A. F. Lebedeva V. S. Levinson E. G. Chupin V. V. and Bonnett R. Oxidative silylation of zinc pyropheophorbide *a* methyl ester 6395
Mirza-Aghayan M. Boukherroub R. Etemad-Moghadam G. Manuel G. and Koenig M. Zirconocyclisation: access to new racemic (di) phosphines 3109
Mirzabekov A. D. see Timofeev E. N. 8467
Mischitz M. see Kroutil W. 8379
Mishani E. Dence C. S. McCarthy T. J. and Welch M. J. Formation of phenylpiperazines by a novel alumina supported bis-alkylation 319
Mishra A. K. Draillard K. Faivre-Chauvet A. Gestin J. F. Curtet C. and Chatal J.-F. A convenient, novel approach for the synthesis of polyaza macrocyclic bifunctional chelating agents 7515
Mislin G. Graf E. and Hosseini M. W. Synthesis of an *exo*-ditopic receptor based on calix[4]arene and catechol 4503
Mita T. see Nakamura Y. 3877
Mitamura F. see Kaneta N. 5385
Mitchell H. J. and Warren S. Diphenylphosphinoyl lactones in the control of remote stereochemistry 2105
Mitchell H. J. see Guéguen C. 7461
Mitchell J. W. see Ciufolini M. A. 8281
Mitchell R. H. and Chen Y. Synthesis of the elusive dibenzannelated dihydropyrene dibenzo[*e,l*]dimethyldihydropyrene, a molecular photo-switch 5239
Mitchell R. H. and Chen Y. Stopping the aromatic ring current. Synthesis of the first bis-metal complexed benzannulene. On the way to a molecular conductor with a photo-switch 6665
Mitchell W. L. see Kocovsky P. 1125
Mitchell W. L. see Kocovsky P. 5585
Mitoma Y. see Mataka S. 65
Mitsuhashi M. see Yokoyama Y. 9309
Miura K. Funatsu M. Saito H. Ito H. and Hosomi A. Titanocene- and zirconocene-mediated cyclization of allyl propargyl ethers. Stereoselective synthesis of 3-methylenetetrahydrofurans 9059
Miura K. Hondo T. Okajima S. and Hosomi A. Stereoselective synthesis of 2,5-disubstituted tetrahydrofurans by silicon-directed cyclization of vinylsilanes bearing a hydroxy group 487
Miura K. Itoh D. Hondo T. Saito H. Ito H. and Hosomi A. Allylstannylation of alkynes via a radical process: stereoselective synthesis of di- and tri-substituted vinylstannanes 8539
Miura S. see Miyaoka H. 7107
Miyachi M. see Shinada T. 7099
Miyagawa H. see Inoue M. 5731
Miyagawa H. see Inoue M. 8823
Miyaji T. see Tsukahara K. 3149

Miyake H. see Yamamura K. 4965
Miyake T. Seki M. Nakamura Y. and Ohmizu H. Synthesis of a novel chiral 1,3-benzoxazinone auxiliary and its application to highly diastereoselective aldol reaction 3129
Miyake T. see Seki M. 5565
Miyamoto H. see Fuji K. 7111
Miyamoto K. see Takahashi Y. 5547
Miyano S. see Hattori T. 2057
Miyaoka H. Saka Y. Miura S. and Yamada Y. Total synthesis of phomactin D 7107
Miyaoka H. Shigemoto T. and Yamada Y. Synthesis of constanolactone E 7407
Miyasaka T. see Kittaka A. 2801
Miyashi T. see Ikeda H. 4377
Miyashi T. see Takahashi Y. 1841
Miyashi T. see Takahashi Y. 5547
Miyashiro M. see Konishi H. 8547
Miyata O. Nishiguchi A. Ninomiya I. Naito T. Aoe K. and Okamura K. Hydroximate as a synthetically useful functional group: a novel synthesis of lactones using hydroximates as a tether 229
Miyaura N. see Ishiyama T. 6889
Miyaura N. see Saito S. 2993
Miyazaki Y. see Ramesh U. 8403
Mizojiri R. see Kobayashi Y. 6125
Mizojiri R. see Kobayashi Y. 8531
Mizuno K. Konishi S. Takata T. and Inoue H. Regioselective intramolecular photocycloaddition of 1-cyano-2-(2-oxa-4-alkenyl)naphthalenes in the presence of Eu(III) salt 7775
Mizuno K. Nishiyama T. Takahashi N. and Inoue H. Photoinduced C_3-unit introduction to electron-deficient molecules by use of cyclopropanone silyl acetals via electron transfer 2975
Mizuno Y. see Hashimoto K. 2275
Mizuochi M. see Fujita K. 4035
Mizusaki T. see Aoyagi Y. 9203
Mizutani J. see Fukushi Y. 4737
Mizutani T. Murakami T. and Ogoshi H. Dynamics of molecular recognition of multi-point host–guest complex 5369
Mizutani T. Takagi H. and Ogoshi H. Role of van der Waals forces in enantioselective processes 2581
Mjalli A. M. M. Sarshar S. and Baiga T. J. Solid phase synthesis of pyrroles derived from a four component condensation 2943
Mjalli A. M. M. see Cao X. 6073
Mjalli A. M. M. see Sarshar S. 835
Mjalli A. M. M. see Short K. M. 7489
Mjalli A. M. M. see Zhang C. 5457
Mjalli A. M. M. see Zhang C. 751
Mladenova M. Alami M. and Linstrumelle G. An efficient stereocontrolled synthesis of functionalized chlorodienes and chlorotrienes 6547
Mlinaric-Majerski K. Pavlovic D. and Marinic Z. A facile, general route to adamantanophanes. Synthesis and conformational behavior of [4.4](1,3)adamantanophan-*trans,trans*-1,8-diene 4829
Mochizuki T. see Shiozaki M. 3875
Mochizuki T. see Shiozaki M. 7271
Mochizuki T. see Shiozaki M. 8627
Mock-Knoblauch C. see Adam W. 6531
Modarelli D. A. see Reed S. C. 7209
Moeller K. D. see Frey D. A. 8317
Mohammadi F. see Grieco P. A. 2699
Mohan R. Chou Y.-L. and Morrissey M. M. Pictet–Spengler reaction on solid support: synthesis of 1,2,3,4-tetrahydro-β-carboline libraries 3963
Mohan R. see Buckman B. O. 4439
Mohan R. see Yun W. 7189
Mohan S. see Bordoloi M. 6791
Mohan V. see Manoharan M. 7675
Mohanakrishnan A. K. and Srinivasan P. C. Synthesis of 4-substituted-1,2,3,4-tetrahydro-β-carbolines via intramolecular radical cyclisation and Heck reaction 2659
Moher E. D. Novel asymmetric synthesis of a bicyclo[3.1.0]hexane derivative by an efficient retro-Diels–Alder strategy 8637
Mohtat N. see Connolly T. J. 4919
Moinet C. see Poignant G. 7511
Moïse C. see Szymoniak J. 33
Molander G. A. and McWilliams J. C. Mild preparation of allylic tartaramide acetals in DMF 7197
Molina M³ L. see Carretero J. C. 3179
Molina P. Fresneda P. M. García-Zafra S. Iminophosphorane-mediated synthesis of 1-acyl-β-carbolines: a new access to the alkaloids eudistomin T, S and xestomanzamine A of marine origin 9353
Molina P. Pastor A. Vilaplana M. J. and Ramírez de Arellano M. C. An efficient preparation of novel ferrocene derivatives via aza Wittig reaction and X-ray structure of bis(β-ferrocenyl-vinyl)carbodiimide 7829
Molina P. see Alajarín M. 8945
Molins E. see Gálvez N. 6197
Molinski T. F. Absolute configuration of phorboxazoles A and B from the marine sponge, *Phorbas* sp.—II. C43 and complete stereochemistry 7879
Mollo E. see Gavagnin M. 4259
Molnár A. and Beregszászi T. Mild and efficient tetrahydropyranylation and deprotection of alcohols catalyzed by heteropoly acids 8597
Moloney M. G. see Dyer J. 4573
Momose T. Nishio T. and Kirihara M. Efficient synthesis of an enantiomeric pair of pinidine: an illustration of organochemical carving on the rigid bridged system as the stereochemical tactics 4987
Mongelli N. see Pinciroli V. 9365
Mongin F. Desponds O. and Schlosser M. Reagent-modulated optional site selectivities: the metalation of *o*-, *m*- and *p*-halobenzotrifluorides 2767
Mongin F. Mongin O. Trécourt F. Godard A. and Quéguiner G. Pyridine hydrochloride: a new reagent for the synthesis of *o*-chloro hydroxy derivatives in pyridine and quinoline series 6695
Mongin F. and Schlosser M. Regioselective *ortho*-lithiation

of chloro and bromo substituted fluoroarenes 6551
Mongin O. and Gossauer A. Tripodaphyrins, a new class of porphine derivatives designed for nanofabrication 3825
Mongin O. see Mongin F. 6695
Monneret C. see Benhida R. 1031
Montalbetti C. Savignac M. Genêt J.-P. Roulet J.-M. and Vogel P. Remote substituent control of the regioselectivity of the aryl- and vinylpalladation of 7-oxabicyclo[2.2.1]heptenes 2225
Montana J. G. see Gamble M. P. 7457
Montanari D. see Gandolfi R. 517
Monte A. P. see Waldman S. R. 7889
Monteiro A. L. Seferin M. Dupont J. and de Souza R. F. Synthesis of 3-aryl-1-butenes by the nickel catalyzed hydrovinylation of styrene derivatives 1157
Montero C. see Marino J. P. 8031
Montero J.-L. see Abdaoui M. 5695
Montero J.-L. see Winum J.-Y. 1781
Montes I. F. and Burger U. The cyanide catalyzed isomerization of enol esters derived from cyclic 1,3-diketones 1007
Monteux D. see Loupy A. 7023
Monteux D. see Loupy A. 8177
Monteux D. see Sageot O. 7019
Montevecchi P. C. and Navacchia M. L. Rearrangements and cyclizations in vinyl radicals. Unusual example of 1,4-radical translocation 6583
Montgomery D. see McAlonan H. 7151
Montgomery J. Seo J. and Chui H. M. P. Competition between insertion and conjugate addition in nickel-catalyzed couplings of enones with unsaturated functional groups 6839
Montgomery J. A. see Elliott A. J. 4339
Montgomery J. A. see Elliott A. J. 5829
Monti D. see Speranza G. 4247
Moody C. M. see Bradley E. L. 7329
Moody C. J. see Buck R. T. 7631
Moody C. J. see Ferris L. 107
Moody C. M. see Bradley E. L. 6935
Moore J. L. see Williams D. R. 983
Moore P. R. see Donohoe T. J. 3407
Moore R. see Calvo K. C. 1169
Moorhoff C. M. Novel reactions of arsonium ylides and substituted 2*H*-pyran-5-carboxylates, a new preparation for functionalised vinylcyclopropanecarboxylate s and dihydrofurans 9349
Moortgat G. K. see Neeb P. 9297
Mootoo D. see Al-Abed Y. 8641
Mootoo D. R. see Ruan Z. 3619
Morales J. C. and Penadés S. Two interconverting glycophanes from maltose 5011
Moran E. J. see Armstrong R. W. 447
Moran E. J. see Zhang C. 751
Morán J. R. see Raposo C. 1485
Morán J. R. see Raposo C. 6947
Moran P. J. S. see de Oliveira Filho A. P. 5029
Morao I. see Ayerbe M. 3055
Mordini A. Valacchi M. Pecchi S. Degl'Innocenti A. and Reginato G. A stereoselective approach to the synthesis of aminoalcohols 5209
Mordini A. see Reginato G. 1325
Moreau C. see Dambrin V. 6323
Moree W. J. see Takayama S. 6287
Moreira B. G. see de Oliveira Filho A. P. 5029
Moreno-Mañas M. Pérez M. and Pleixats R. Stereospecific preparation of ethyl (*E*) and (*Z*)-3-aryl-3-phenylpropenoates by Heck reaction 7449
Moreno-Mañas M. see Gálvez N. 6197
Morgan A. R. see Cheng J. 2721
Morgan D. O. see Andrews I. P. 4811
Morgan P. E. Whiting A. and McCague R. An asymmetric synthesis of α-amino acid derivatives from racemic ethyl *N*-phenylsulphonyl-α-bromoglycinate using homochiral aluminium complexes 4795
Morgans, Jr D. J. see Smith D. B. 21
Mori H. Ikoma K. Masui Y. Isoe S. Kitaura K. and Katsumura S. Abnormally high reactivity of the vinyl hydrogen toward singlet oxygen in a twisted 1,3-diene 7771
Mori H. see Kawagishi H. 7399
Mori K. Murai O. Hashimoto S. and Nakamura Y. Highly regio- and stereo-selective photocycloaddition between coumarin and thymine by molecular recognition 8523
Mori K. Nakayama T. and Takikawa H. Synthesis and absolute configuration of sordidin, the male-produced aggregation pheromone of the banana weevil, *Cosmopolites sordidus* 3741
Mori K. and Takanashi S. Synthesis of lurlene, the sex pheromone of the green flagellate *Chlamydomonas allensworthii* 1821
Mori K. see Kobayashi J. 6775
Mori M. see Ishibashi T. 6165
Mori M. see Sato Y. 887
Mori S. see Ueoka R. 3461
Mori Y. Yaegashi K. Iwase K. Yamamori Y. and Furukawa H. Alkylation of oxiranyl anions 2605
Mori Y. Yaegashi K. Iwase K. Yamamori Y. and Furukawa H. Corrigendum 6959
Morice C. Le Maux P. and Simonneaux G. Oxidation and chiral recognition of amino esters by dioxoruthenium(VI) porphyrins: synthesis of new imino ester Ru(II) complexes 6701
Morikawa O. see Kobayashi K. 2437
Morikawa O. see Konishi H. 7383
Morikawa O. see Konishi H. 8547
Morimoto H. see Saljoughian M. 2923
Morimoto M. Matsukura H. and Nakata T. Total synthesis of hemibrevetoxin B 6365
Morimoto M. see Nakata T. 217
Morin C. and Nedjar N. Oxidative degradation of larixol and larixyl acetate 4705
Morin C. see Malan C. 6705
Morin G. T. and Smith B. D. Crown nucleoside monophosphate diesters: a new class of nucleoside prodrugs 3101
Morioka H. see Shibata T. 8783
Morita H. Takeda M. Kamiyama H. Hashimoto T. Yoshimura T. Shimasaki C.

and Tsukurimichi E.
Thiapyran formation via an unexpected thioaldehyde intermediate by the thermal decomposition of phenacyl sulfoxides bearing some heterocycles 3739
Morita K. see Yamanaka H. 1829
Morita Y. see Hatanaka K. 873
Morita Y. see Hatanaka K. 877
Moriwake T. see Takai K. 7049
Moriwaki M. see Kobayashi S. 2053
Moriwaki M. see Kobayashi S. 2809
Moriwaki M. see Kobayashi S. 4183
Moriwaki M. see Kobayashi S. 7783
Morken J. P. Didiuk M. T. and Hoveyda A. H.
Directed regioselective Ni-catalyzed alkylation and hydride addition of allylic ethers. A remarkable turnover in regioselectivity 3613
Mørkved E. H. Lakshmikantham M. V. and Cava M. P.
o-Quinonoid heterocycles: benzo[*c*]tellurophene 9149
Moro S. see Conte V. 8609
Morphy J. R. Rankovic Z. and Rees D. C.
A novel linker strategy for solid-phase synthesis 3209
Morphy J. R. see Barn D. R. 3213
Morrissey M. M. see Mohan R. 3963
Mortier J. see Ameline G. 8175
Mortier J. see Garnier L. 6699
Mortreux A. see Bricout H. 6105
Mortreux A. see Carpentier J.-F. 167
Morzycki J. W. Wilczewska A. Z. and Łotowski Z.
On reaction of enamides with acetyl nitrate 2079
Moss G. P. Ooi C. K. and Bondar G. V.
Further rearrangements of diepoxycyclohexanes: formation of acetyldihydroxy-cyclopentane derivatives 2877
Moss R. A. Maksimovic L. Marchand A. P. and Ramanaiah K. C. V.
Kinetics of the reaction of phenylchlorocarbene with an azabicyclobutane 5849
Moss R. A. Xue S. and Ma W.
The kinetic isotope effect on the carbenic 1,2-H(D) shift originating at a tertiary carbon atom 1929
Moss R. A. and Liu W.
Kinetic isotope effects on the 1,3-intramolecular insertion reaction of *t*-butylchloro-carbene 279
Motevalli M. see Arvanitis E. 4277
Motherwell W. B. see Corlay H. 5983
Mottram H. R. and Evershed R. P.
Structure analysis of triacylglycerol positional isomers using atmospheric pressure: chemical ionisation mass spectrometry 8593
Motz P. L. see Schnapp K. A. 2317
Moufid N. see Gerster M. 6335
Moussa M. M. and Le Quesne P. W.
Total synthesis of the cyclodepsipeptide ionophore pithomycolide 6479
Moutou J.-L. Schmitt M. Collot V. and Bourguignon J.-J.
A two-steps benzotriazole-assisted synthesis of 3-amino-2-ethoxycarbonyl imidazo[1,2-*a*]pyridines and related compounds 1787
Moya E. see Blagbrough I. S. 551
Mueller R. A. see Khanna I. K. 1355
Muir J. E. see Davis A. P. 9401
Mukai C. Hirai S. Kim I. J. and Hanaoka M.
First total synthesis and structural elucidation of (–)-goniofupyrone 5389
Mukherjee A. K. see Maiti S. 8061
Mukherjee D. see Das S. 4421
Mukugi Y. see Hatakeyama S. 4047
Mukugi Y. see Hatakeyama S. 4287
Mulders S. J. E. see Lõwik D. W. P. M. 8253
Muller B. Delaloge F. den Hartog M. Férézou J.-P. Pancrazi A. Prunet J. Lallemand J.-Y. Neuman A. and Prangé T.
Diastereoselective synthesis of a taxane precursor 3313
Müller D. see Kempin U. 5087
Müller G. H. and Waldmann H.
An enzyme-initiated domino hydroxylation–oxidation–carbo-Diels–Alder reaction cascade 3833
Müller M. see Shilvock J. P. 8569
Mulzer J. Martin H. J. and List B.
One-pot three component synthesis of α,β-unsaturated ketones 9177
Mulzer J. and List B.
[2,3]-Wittig rearrangements of (trimethylsilyl)methyl allyl ethers 2403
Mulzer J. and Mantoulidis A.
Synthesis of the C(1)–C(9) segment of the cytotoxic macrolides epothilon A and B 9179
Mulzer J. see Maguire R. J. 5487
Muñoz de la Peña A. see Sánchez Peña M. 5841
Murahashi S.-I. see Komiya N. 1633
Murai A. see Hayashi N. 6173
Murai A. see Nakamura H. 3153
Murai A. see Nakamura H. 7267
Murai O. see Mori K. 8523
Murai Y. see Kashimura S. 6737
Murakami K. see Tanaka T. 7809
Murakami M. Hayashi M. Tamura N. Hoshino Y. and Ito Y.
A new water-compatible dehydrating agent DPTF 7541
Murakami M. see Ishida K. 9225
Murakami M. see Okada S. 1065
Murakami T. see Mizutani T. 5369
Murakami Y. see Yokoyama Y. 9309
Muraki T. Togo H. and Yokoyama M.
Remote functionalization: cyclic alkoxylation onto aromatic ring via radical pathway 2441
Muramatsu H. see Katsuyama I. 4177
Muraoka H. see Tsunoi S. 6729
Muraoka O. see Yoshimatsu M. 4161
Murase H. see Toshima K. 1069
Murashima T. Tamai R. Fujita K. Uno H. and Ono N.
Ambident reactivity of nitro heteroaromatic anions 8391
Murashima T. Uchihara Y. Wakamori N. Uno H. Ogawa T. and Ono N.
The first preparation of crown ether-annulated porphyrin 3133
Murata K. see Kita Y. 7369
Murata M. see Matsumori N. 1269
Murata Y. Komatsu K. and Wan T. S. M.
The reaction of [60]fullerene with lithium fluorenide: formation of a novel 1,4-adduct of [60]fullerene 7061
Murata Y. see Kaneta N. 5385
Murata Y. see Komatsu K. 6153
Murayama T. see Ogino T. 7065
Murayama T. see Uyehara T. 7295

Murphy B. L. see Gala D. 611
Murphy F. see Markó I. E. 2089
Murphy F. see Markó I. E. 2507
Murphy J. A. see Kizil M. 5027
Murphy J. A. see Kizil M. 2511
Murphy P. J. see Black G. P. 6943
Murphy W. S. Neville D. and Ferguson G.
Regiospecific free radical annulation reactions of diethylbenzylmalonate with unsymmetrical 1,4-naphthoquinones: a direct approach to ring A aromatic angucyclinones 7615
Murphy W. S. and Neville D.
Novel alkylaluminium chloride promoted [2 + 2] cycloaddition reactions of styrenes with 1,4-naphthoquinones and bromoquinones: a facile route to orthoquinodimethane precursors 9397
Murphy W. S. see Neville D. 5221
Murray P. J. and Starkey I. D.
The enantiospecific synthesis of functionalised pipecolic acids as constrained analogues of lysine 1875
Murray R. W. Iyanar K. Chen J. and Wearing J. T.
Oxidation of organonitrogen compounds by the methyltrioxorhenium–hydrogen peroxide system 805
Murray R. W. Singh M. and Rath N.
The reaction of dimethyldioxirane with chrysene: formation of a trioxide 8671
Murtuza S. see Jiang Q. 797
Mutai K. Kajii Y. Nakagaki R. and Obi K.
Photoinduced through-bond electron transfer and rearrangement in bichromophoric chain molecules 505
Mutou T. Kondo T. Shibata T. Ojika M. Kigoshi H. and Yamada K.
Synthesis of dolastatin G and nordolastatin G, cytotoxic 35-membered cyclodepsipeptides of marine origin 7299
Mutou T. see Suenaga K. 6771
Mutter M. see Wahl F. 6861
Mutti S. Daubié C. Decalogne F. Fournier R. and Rossi P.
Enantiospecific synthesis of RPR 107880: a new non peptide substance P antagonist 3125
Mutti S. Daubié C. Malpart J. and Radisson X.
Practical enantiospecific synthesis of RPR 111905: a novel non-peptide substance P antagonist 8743
Mutti S. see Daubié C. 7743
Mutulis F. see Reetz M. T. 9293
Myers A. G. Hammond M. and Wu Y.
An improved preparation of highly enantiomerically enriched (*R*)-(+)-4-*tert*-butyldimethylsiloxy-2-cyclopenten-1-one 3083
Myers A. G. Subramanian V. and Hammond M.
A concise synthesis of the naphthoic acid component of neocarzinostatin chromophore featuring a new photocyclization reaction 587
Myers A. G. Yang B. H. and Kopecky D. J.
Lithium amidotrihydroborate, a powerful new reductant. Transformation of tertiary amides to primary alcohols 3623
Myers A. G. and Zheng B.
An efficient method for the reductive transposition of allylic alcohols 4841
Myles D. C. see Shepherd J. A. 2395

Nabeshima T. see Shima H. 667
Nadzan A. M. see Bennani Y. L. 8109
Naemura K. see Tobe Y. 9325
Nagai S. see Kamata M. 7779
Nagamoto K. see Tanaka Y. 881
Naganawa H. see Hosoya Y. 9227
Nagao Y. Jeong I.-Y. and Lee W. S.
Ring enlargement reaction of 3-hydroxy-3-propargylisoindolin-1-ones: a new synthetic method for the 2-benzazepine-1,5-diones 393
Nagao Y. Kim K. Sano S. Kakegawa H. Lee W. S. Shimizu H. Shiro M. and Katunuma N.
Syntheses and reactions of the diethyl α-alkynylmalonates involving the generation of conjugated allenyl esters as the latent active species: a new approach to the development of cysteine proteinase inhibitors 861
Nagao Y. see Shibuya M. 865
Nagaoka H. see Shimano M. 7553
Nagaoka Y. see Nakagawa Y. 7805
Nagaraj R. see Ranganathan S. 5199
Nagarajan A. Zepeda G. and Tamariz J.
Highly selective 1,3-dipolar cycloadditions of captodative olefins 1-acetylvinyl carboxylates to diverse dipoles 6835
Nagarajan M. see Venkateswara Rao B. 8613
Nagaraju S. see Srikrishna A. 1679
Nagasawa A. see Tomooka K. 8895
Nagasawa A. see Tomooka K. 8899
Nagasawa K. Shimizu I. and Nakata T.
Total synthesis of preswinholide A—I. Stereoselective synthesis of the C11–C23 segment 6881
Nagasawa K. Shimizu I. and Nakata T.
Total synthesis of preswinholide A—II. Completion of the synthesis 6885
Nagase S. see Iyoda M. 7987
Nagata K. see Itoh T. 4165
Nagata K. see Taniguchi Y. 3465
Nagata Y. see Katoh T. 3479
Nagata Y. see Yoshino T. 3475
Nagatomi Y. see Fujioka H. 2245
Nagayama C. see Choshi T. 2593
Nagayama S. see Kobayashi S. 9221
Nagino C. see Tsunoda T. 2459
Nagle D. G. Paul V. J. and Roberts M. A.
Ypaoamide, a new broadly acting feeding deterrent from the marine cyanobacterium *Lyngbya majuscula* 6263
Nahorski S. R. see Fauq A. H. 1917
Nair A. G. see Nair V. 5623
Nair V. Anilkumar G. Eigendorf G. K. and Williard P. G.
Borontrifluoride-etherate induced rearrangement of bicyclo[2.2.2]octene-7,8-diones: an efficient synthesis of bicyclo[3.2.1]octene-2,8-diones 8271
Nair V. Kumar S. and Williard P. G.
Corrigendum 2315
Nair V. Radhakrishnan K. V. Nair A. G. and Bhadbhade M. M.
1,3-Dipolar cycloaddition of nitrile-*N*-oxides with 3,5-di-*tert*-butyl-1,2-benzoquinone: facile formation of spiro-1,3-dioxazoles 5623
Nair V. see Ha S. B. 1567
Naito T. see Miyata O. 229
Nájera C. see Bernabeu M. C. 3595
Nájera C. see Caturla F. 2833
Nájera C. see Caturla F. 4787
Nájera F. see Suau R. 3575
Naka T. see Kita Y. 7369

Nakada M. see Sato S. 6141
Nakagaki R. see Mutai K. 505
Nakagawa Y. Kanai M. Nagaoka Y. and Tomioka K. Structural requirements of an external, chiral amidophosphine ligand for asymmetric reaction of an organocopper reagent 7805
Nakai E. see Kobayashi M. 3005
Nakai K. see Ibuka T. 2849
Nakai M. see Takahashi C. 655
Nakai T. see Kobayashi M. 3005
Nakai T. see Sugiura M. 7991
Nakai T. see Tomooka K. 8895
Nakai T. see Tomooka K. 8899
Nakai Y. see Fukase K. 3343
Nakajima K. see Takahashi T. 7521
Nakajima N. see Makino K. 9073
Nakajima N. see Makino K. 9077
Nakajima N. see Matsushima T. 385
Nakajima T. see Shinada T. 7099
Nakajima T. see Yoda H. 5531
Nakamura H. Fujimaki K. and Murai A. Synthetic studies on the common C25 long chain acid portion of zooxanthellatoxins from a symbiotic dinoflagellate *Symbiodinium* sp. 3153
Nakamura H. Sato K. and Murai A. Absolute configuration of the spiroacetal portion of zooxanthellatoxin-A 7267
Nakamura H. see Hosoya Y. 9227
Nakamura K. Kitano K. Matsuda T. and Ohno A. Asymmetric reduction of ketones by the acetone powder of *Geotrichum candidum* 1629
Nakamura K. Matsuda T. Itoh T. and Ohno A. Different stereochemistry for the reduction of trifluoromethyl ketones and methyl ketones catalyzed by alcohol dehydrogenase from *Geotrichum* 5727
Nakamura K. Nishiyama S. and Yamamura S. Interaction between cell wall model of vancomycin resistant strain and aglucovancomycin synthetic analogs 191
Nakamura K. see Itoh T. 5001
Nakamura T. see Konishi H. 7383
Nakamura Y. Mita T. and Nishimura J. Synthesis and properties of [2.2](3,3')biphenylo(3,6)phena nthrenophane 3877
Nakamura Y. Takeuchi S. Ohira A. and Ohgo Y. Catalytic enantioselective protonation of samarium enolates by a C_2-symmetric chiral diol 2805
Nakamura Y. see Miyake T. 3129
Nakamura Y. see Mori K. 8523
Nakano H. see Yamana K. 5963
Nakano H. see Yamana K. 637
Nakano K. see Kitamura M. 5141
Nakao Y. Yoshida W. Y. and Scheuer P. J. Pupukeamide, a linear tetrapeptide from a cephalaspidean mollusk *Philinopsis speciosa* 8993
Nakasuji K. see Hatanaka K. 873
Nakasuji K. see Hatanaka K. 877
Nakata E. see Kawabata T. 4153
Nakata M. see Toshima K. 1069
Nakata M. see Toshima K. 1073
Nakata T. Nomura S. Matsukura H. and Morimoto M. Stereoselective synthesis of the C- and CD-ring systems of hemibrevetoxin B 217
Nakata T. Nomura S. and Matsukura H. Stereoselective synthesis of six- and seven-membered ether rings based on the ring expansion 213
Nakata T. see Morimoto M. 6365
Nakata T. see Nagasawa K. 6881
Nakata T. see Nagasawa K. 6885
Nakata T. see Shimizu T. 6145
Nakata T. see Shimizu T. 6755
Nakatani S. see Katoh T. 3479
Nakatsubo F. see Nishimura T. 9215
Nakatsuji S. see Yamamura K. 4965
Nakatsuji Y. see Zhang W. 7995
Nakayama N. see Kohmoto S. 7761
Nakayama T. see Mori K. 3741
Nakayama T. see Sano H. 8891
Namane A. see Kreimeyer A. 8739
Namazi H. see Grindley T. B. 991
Namba T. see Kadota S. 7283
Nandi B. see Ghosh S. 3169
Nandy S. K. see Sarkar T. K. 5195
Nannelli L. see Goti A. 6025
Nanni D. Pareschi P. and Tundo A. Isonitriles as source and fate of imidoyl radicals: a novel homolytic α-fragmentation 9337
Nano G. M. see Fenoglio I. 3203
Naoe Y. see Shibuya M. 865
Naoki H. see Shinada T. 7099
Naota T. see Komiya N. 1633
Napolitano A. Pezzella A. d'Ischia M. and Prota G. The first characterisation of a transient 5,6-indolequinone 4241
Napolitano A. Vincensi M. R. d'Ischia M. and Prota G. A new benzothiazole derivative by degradation of pheomelanins with alkaline hydrogen peroxide 6799
Nara S. Toshima H. and Ichihara A. Intramolecular 1,6-conjugate addition approach for construction of the hydrindane framework: total synthesis of (±)-coronafacic acid 6745
Narayana C. see Kabalka G. W. 2181
Narsaiah B. see Chandra Sheker Reddy A. 2829
Narske R. see Xue L. 1921
Narukawa Y. Nishi K. and Onoue H. Facile synthesis of 2-alkyl substituted carbapenems via palladium-catalyzed cross-coupling reaction 2589
Narukawa Y. see Nishi K. 2987
Nascimento G. M. S. F. C. see Cavaleiro J. A. S. 1893
Nash I. A. Bycroft B. W. and Chan W. C. Dde—a selective primary amine protecting group: a facile solid phase synthetic approach to polyamine conjugates 2625
Nash R. J. see Bell A. A. 8561
Nash R. J. see Davis B. 8565
Nash R. J. see Griffiths R. C. 3207
Nash R. J. see Shilvock J. P. 8569
Naso F. see Cardellicchio C. 6017
Nasreen A. Rueffer M. and Zenk M. H. Cytochrome P-450-dependent formation of isoandrocymbine from autumnaline in colchicine biosynthesis 8161
Nass O. see Franck-Neumann M. 8763
Natt F. see Calmes M. 379
Naumann C. see Asfari Z. 3325
Navacchia M. L. see Montevecchi P. C. 6583
Nawata H. see Ichikawa J. 8799
Nayak N. P. see Maiti S. 8061

Nayyar N. K. see Hoffman R. V. 2381
Nayyar N. K. see Hutchison D. R. 2887
Naz N. see Al-Abed Y. 8641
N'Diaye I. Guella G. Mancini I. and Pietra F. Almazole D, a new type of antibacterial 2,5-disubstituted oxazolic dipeptide from a red alga of the coast of Senegal 3049
Nedjar N. see Morin C. 4705
Neeb P. Horie O. and Moortgat G. K. Formation of secondary ozonides in the gas-phase ozonolysis of simple alkenes 9297
Neef G. see Klar U. 7497
Neel D. A. Holmes R. E. and Paschal J. W. Synthesis of a 3-keto bicyclic pyrazolidinone using a Curtius rearrangement 4891
Neeland E. G. Sharadendu A. and Weiler L. Alkylation of the dianion of 3-oxo-13-tetradecanolide 5069
Nefkens G. H. L. see Thuring J. W. J. F. 4759
Nefkens S. C. A. see Xiao J. 2813
Negash K. and Nichols D. E. A new approach for the synthesis of (±)-*trans*-10,11-dihydroxy-5,6,6a,7,8,12b-hexahydrobenzo[*a*]phenanthridine (dihydrexidine) 6971
Negishi E. see Kondakov D. Y. 3803
Negishi E. see Kotora M. 9041
Negishi E. see Pour M. 4679
Negoro N. see Yanada R. 9313
Négrel J.-C. see Mattalia J.-M. 4717
Negrimovsky V. M. see Barkanova S. V. 1637
Negriolli J. Maume D. Deniaud D. and André F. Corticosteroid derivatization: unexpected results obtained using *N,N*-dimethylformamide dimethyl acetal on dexamethasone 5365
Nelson A. and Warren S. Intramolecular acylations of γ-benzoyloxy phosphine oxides: synthesis of optically active cyclopropyl ketones 1501
Nelson A. see Cavalla D. 7465
Nelson J. T. see Smith D. B. 21
Nemoto H. Cai J. and Yamamoto Y. A new synthetic method of all carboxylate-free DTPA derivatives and its application to the synthesis of Gd–carborane complex 539
Nemoto H. Shiraki M. Yamada N. Raku N. and Fukumoto K. A new stereocontrolled access to angularly disubstituted *cis*-decalins via tandem radical ring expansion and cyclization 6355
Nemoto H. see Cai J. 3383
Nemoto H. see Irie O. 9229
Nemoto H. see Shibuya M. 865
Nemoto H. see Wakayama M. 5397
Nenajdenko V. G. Baraznenok I. L. and Balenkova E. S. Reaction of *N,N*-dimethylacrylamide/trifluoromethanesulfonic anhydride complex with electron-rich aromatic compounds 4199
Nepveu F. see Urizzi P. 4685
Neri P. see Cunsolo F. 715
Neri P. see Geraci C. 3899
Neri P. see Geraci C. 7627
Nes W. D. see Guo D. 6823
Nes W. D. see Zhou W. 1339
Neszmélyi A. see Dubois E. P. 3627
Netscher T. and Bohrer P. Formation of sulfinate esters in the synthesis of triflates 8359
Neuburger M. see Bolm C. 3985
Neuman A. see Ducrot P.-H. 3121
Neuman A. see Muller B. 3313
Neumeyer J. L. see Tamagnan G. 4353
Neves M. G. P. M. S. see Cavaleiro J. A. S. 1893
Neves M. G. P. M. S. see Faustino M. A. F. 3569
Neves M. G. P. M. S. see Vicente M. G. H. 261
Neville D. and Murphy W. S. Novel Lewis acid promoted spiroannulation versus [2+2]-cycloaddition of dihydrofuran and dihydropyran to quinones 5221
Neville D. see Murphy W. S. 7615
Neville D. see Murphy W. S. 9397
Neville W. A. see New A. P. 3039
New A. P. Eckers C. Haskins N. J. Neville W. A. Elson S. Hueso-Rodríguez J. A. and Rivera-Sagredo A. Structures of polysporins A–D, four new peptaibols isolated from *Trichoderma polysporum* 3039
Newadkar R. V. see Master H. E. 9253
Newcomb M. Simakov P. A. and Park S.-U. Hypersensitive radical probe studies of Gif oxidations 819
Newcomb M. see Tronche C. 5845
Newton C. see Sablong R. 4933
Ng M.-K. Chow H.-F. Chan T.-L. and Mak T. C. W. Synthesis and chiroptical properties of axially chiral, binaphthol-based oligomers 2979
Ng W. and Wege D. The total synthesis of favelanone 6797
Nguefack J.-F. Bolitt V. and Sinou D. Palladium-mediated cyclisation on carbohydrate templates. A new route to bis-annulated pyranosides 59
Nguefack J.-F. Bolitt V. and Sinou D. An efficient palladium-catalysed coupling of terminal alkynes with aryl halides under Jeffery's conditions 5527
Nguyen C. K. see Flores V. 8633
Nguyen L. T. and Smith K. M. Syntheses of type-I porphyrins via monopyrrole tetramerization 7177
Nguyen V.-H. Nishino H. and Kurosawa K. Convenient synthesis of 3-cyano-4,5-dihydrofurans and 4-cyano-1,2-dioxan-3-ols using acylacetonitrile building block 4949
Nice L. E. see Dieter R. K. 2377
Nicholas K. M. see Dare S. 4341
Nichols C. J. see Jung M. E. 7667
Nichols D. E. see Negash K. 6971
Nichols D. E. see Waldman S. R. 7889
Nicholson G. J. see Kaiser T. 1187
Nicolaides D. N. Awad R. W. Papageorgiou G. K. Stephanidou-Stephanatou J. Terzis A. and Raptopoulou C. P. Synthesis of 1-methoxy-1H-phenanthro[9,10-c][1,2]oxazine and its transformation to triphenylene-*o*-dicarboxylic derivatives 1097
Nicolosi G. see Lambusta D. 127
Niedt M.-L. see Schierle K. 8715
Nielsen J. and Lyngsø L. O. Combinatorial solid-phase synthesis of balanol analogues 8439
Nielsen J. and Rasmussen P. H. Implementation of a combinatorial cleavage and deprotection scheme—I. Synthesis of phthalhydrazide libraries 3351

Ninkovic S. see Hanessian S. 8967
Ninkovic S. see Hanessian S. 8971
Ninomiya I. see Miyata O. 229
Nishi K. Narukawa Y. and Onoue H. A direct and convenient approach toward 2-alkenylcarbapenems via the Heck reaction 2987
Nishi K. see Narukawa Y. 2589
Nishida M. see Nishigaichi Y. 3701
Nishide K. Shigeta Y. Obata K. Inoue T. and Node M. Reductive desulfurization using the Raney nickel–sodium hypophosphite combination system without racemization of a secondary alcohol 2271
Nishide K. see Shibata K. 2791
Nishigaichi Y. Ishida N. Nishida M. and Takuwa A. Substituent-control of stereoselectivity in the reaction of allylic tins. *anti*-Selective Lewis acid-promoted reaction toward aldehydes 3701
Nishiguchi A. see Miyata O. 229
Nishiguchi T. see Saitoh M. 6733
Nishii Y. see Tanabe Y. 1837
Nishijima M. see Shiozaki M. 3875
Nishijima M. see Shiozaki M. 7271
Nishijima M. see Shiozaki M. 8627
Nishijima M. see Takano I. 7053
Nishikawa T. see Bamba M. 8199
Nishikori H. and Katsuki T. Catalytic and highly enantioselective aziridination of styrene derivatives 9245
Nishimoto M. see Eto M. 2445
Nishimura J. see Nakamura Y. 3877
Nishimura T. and Nakatsubo F. First stepwise synthesis of cellulose analogs 9215
Nishimura Y. see Hosoya Y. 9227
Nishino H. see Iida A. 9219
Nishino H. see Nguyen V.-H. 4949
Nishino N. see Tanaka Y. 881
Nishio H. see Nishiuchi Y. 7529
Nishio T. see Momose T. 4987
Nishioka N. see Takahashi Y. 1841
Nishiuchi Y. Nishio H. Inui T. Kimura T. and Sakakibara S. N^{in}-Cyclohexyloxycarbonyl group as a new protecting group for tryptophan 7529
Nishiyama N. see Sugimura T. 7303
Nishiyama S. see Ishibashi Y. 2997
Nishiyama S. see Konishi H. 8791
Nishiyama S. see Nakamura K. 191
Nishiyama S. see Ohmori K. 3467
Nishiyama T. see Mizuno K. 2975
Nishiyama Y. see Shiraishi H. 7291
Nishizono N. Koike N. Yamagata Y. Fujii S. and Matsuda A. Nucleosides and nucleotides—CLIX. Synthesis of thietane nucleosides via the Pummerer reaction as a key step 7569
Niwa H. see Komori A. 4031
Niwa M. see Futaki S. 201
Nock N. see Alzeer J. 6857
Node M. see Nishide K. 2271
Node M. see Shibata K. 2791
Noé E. Séraphin D. Zhang Q. Djaté F. Hénin J. Laronze J.-Y. and Lévy J. Synthesis of the new (cyclopenta[*b*]pyrrolo[1,2-*d*])azepino[4,5-*b*]indole ring system 5701
No E. Séraphin D. Zhang Q. Djaté F. Hénin J. Laronze J.-Y. and Lévy J. Corrigendum 8823
Noe M. C. and Corey E. J. Position and enantioselective dihydroxylation of 2-hydroxymethyl- and 2-hydroxyethyl-1,3-butadiene derivatives using bis-cinchona alkaloid catalysts 1739
Noe M. C. see Corey E. J. 1735
Noe M. C. see Corey E. J. 4899
Noels A. F. see Demonceau A. 1025
Nogami T. see Komori A. 4031
Nogami Y. see Fujita K. 1825
Noguchi H. see Sugasawa K. 7377
Noguchi I. see Takemoto Y. 3345
Noguchi Y. Irie R. Fukuda T. and Katsuki T. Mn–salen catalyzed asymmetric epoxidation of (±)-3-alkylindene: reagent-dependent stereoselectivity 4533
Noguchi Y. see Toshima K. 1073
Noh D.-Y. Lee H.-J. Hong J. and Underhill A. E. New synthesis of phenyl-substituted 2,3-dihydro-1,3-dithiolo[4,5-*e*][1,4]dithiin-6-thione 7603
Noh T. and Kim D. Reinvestigation in the photoreaction of 1-naphthalenecarbonitrile and furan 9329
Noiret N. see Poulain S. 7703
Nojima M. see Abe M. 1833
Nojima M. see Abe M. 5901
Nojima M. see Ushigoe Y. 2093
Nomoto K. see Takahashi C. 655
Nomura S. see Nakata T. 213
Nomura S. see Nakata T. 217
Nonomura T. see Matsumori N. 1269
Norcross R. D. see Paterson I. 8581
Norley M. C. see Boden C. D. J. 9111
Norman T. C. see Kim J.-M. 5309
Normant J.-F. see Bähr A. 5873
Normant J.-F. see Meyer C. 857
Normant J. F. see Lorthiois E. 6689
Normant J. F. see Lorthiois E. 6693
Nørret M. see Gardiner J. M. 8447
Norris P. Horton D. and Giridhar D. E. Intramolecular 1,3-dipolar cycloadditions of 5-azido-5-deoxyaldopentose ketene dithioacetal bis(sulfones) in the synthesis of imino sugar analogs 3925
Norte M. Fernández J. J. Souto M. L. and García-Grávalos M. D. Two new antitumoral polyether squalene derivatives 2671
North M. Baker's yeast reduction of β-keto esters in petrol 1699
Nöth H. see Riebel P. 1587
Nouguier R. see Bertrand M.-P. 1229
Novachek K. A. and Meyers A. I. A convenient procedure for the reduction of *S*-(+)-silyl serine methyl ester to chiral serinol derivatives 1743
Novachek K. A. see Meyers A. I. 1747
Nowak T. see Paterson I. 8243
Nowogrocki G. see Marek D. 49
Noyori R. see Kitamura M. 5141
Noyori R. see Xiao J. 2813
Numata A. see Takahashi C. 655
Nunami K. see Kubo A. 4957
Nupponen H. see Vepsäläinen J. 3533
Nuss S. Oudet P. Lebeau L. and Mioskowski C. Synthesis of glycerol deuterated ether phospholipids 5705

Nutt R. F. see Tamura S. Y. 4109

Oballa R. M. see Paterson I. 8581
Oballa R. M. see Paterson I. 8585
Obata K. see Nishide K. 2271
Oberti R. see Gandolfi R. 917
Obeyesekere N. U. see Wang W. 6661
Obi K. see Mutai K. 505
O'Brien P. and Poumellec P. A simple and efficient method for the preparation of homochiral amines: application to the synthesis of a new C_2 symmetric triamine 5619
O'Brien P. and Poumellec P. Chiral base-mediated rearrangement of *meso*-cyclohexene oxides to allylic alcohols 8057
O'Brien P. and Warren S. Norephedrine-derived oxazolidines as chiral auxiliaries—stereocontrolled routes to *R* or *S* β-hydroxy phosphine oxides 3051
O'Brien P. and Warren S. Synthesis of phenylalanine-derived β-hydroxy and β-keto phosphine oxides—investigation of the configurational stability of lithiated phosphine oxides using the Hoffmann test 4271
O'Brien P. see Cavalla D. 7465
O'Brien P. see Gamble M. P. 7457
O'Brien P. see Guéguen C. 7461
Ochi M. see Kotsuki H. 3727
Ochiai M. Toyonari M. Sueda T. and Kitagawa Y. Boron–iodine(III) exchange reaction: direct synthesis of diaryliodonium tetraarylborates from (diacetoxyiodo)arenes by the reaction with alkali metal tetraarylborates in acetic acid 8421
Ochiai M. see Shu T. 5539
Ochifuji N. see Ishibashi T. 6165
Ochoa A. see López-Calahorra F. 5019
Ochoa de Retana A. M. see Palacios F. 4577
Ockendon T. P. see Gamble M. P. 7457
O'Connor G. see Robertson J. 3411
Odinokova L. E. see Denisenko M. V. 5187
Oeschger T. R. see Sammakia T. 4427
Ogasawara K. see Kamikubo T. 499
Ogasawara K. see Sugahara T. 205
Ogasawara K. see Sugahara T. 7403
Ogawa R. see Arai Y. 4381
Ogawa T. see Kanie O. 4551
Ogawa T. see Murashima T. 3133
Oget N. see Gardinier I. 7711
Ogilvie R. J. see Macor J. E. 4289
Ogino T. Wada F. Murayama T. Aoki S. and Ohshima K. Photochemistry of bichromophoric systems. Photoreactions of cyclopentenone and stilbene fixed in a rigid molecule 7065
Ogle C. A. see Birman V. B. 5073
Ogoshi H. see Mizutani T. 2581
Ogoshi H. see Mizutani T. 5369
Oguma D. see Matsumoto M. 397
Oguri M. see Tsunoda T. 2459
Oh C. H. Rhim C. Y. Kang J. H. Kim A. Park B. S. and Seo Y. Cycloreductions via alkylpalladium intermediates: an important mechanistic clue for palladium-catalyzed enediyne cyclizations 8875
Oh D. Y. see Kim D. Y. 653
Oh D. Y. see Sung J. W. 7537
Oh S. W. see Park K. H. 8869
O'Hanlon P. J. see Witty D. R. 3067
Ohashi Y. see Hosoya T. 663
Ohata K. see Konishi H. 7383
Ohba S. see Ishibashi Y. 2997
Ohba S. see Li S. 7365
Ohba T. see Hatanaka K. 873
Ohba T. see Hatanaka K. 877
Ohba T. see Ito K. 5959
Ohba Y. see Ito K. 5959
Ohe T. see Yamada S. 6777
Ohfune Y. see Gao W. 7071
Ohga Y. see Takeuchi K. 8185
Ohga Y. see Tokunaga K. 2241
Ohgo Y. see Nakamura Y. 2805
Ohira A. see Nakamura Y. 2805
Ohizumi Y. see Matsunaga K. 1455
Ohkubo T. see Kuramochi T. 7075
Ohmizu H. see Miyake T. 3129
Ohmizu H. see Seki M. 5565
Ohmizu H. see Yamanaka T. 4967
Ohmori H. see Hamada Y. 7565
Ohmori H. see Maeda H. 5381
Ohmori K. Okuno T. Nishiyama S. and Yamamura S. Synthetic study on hapalosin, a cyclic depsipeptide possessing multidrug resistance reversing activities 3467
Ohno A. see Kawai Y. 8905
Ohno A. see Nakamura K. 1629
Ohno A. see Nakamura K. 5727
Ohno A. see Yasui S. 1625
Ohno M. Kojima S. Shirakawa Y. and Eguchi S. δ-Valerolactam derivative of C_{60} from hetero Diels–Alder reaction with 1,3-bis(*tert*-butyldimethylsilyloxy)-2-aza-1,3-butadiene 9211
Ohsawa A. see Itoh T. 4165
Ohshima K. see Ogino T. 7065
Ohta A. see Aoyagi Y. 9203
Ohta K. see Fujita K. 1825
Ohta K. see Fujita K. 4035
Ohta S. Uno M. Tokumasu M. Hiraga Y. and Ikegami S. Hippospongic acid A: an unusual triterpenoic acid from a marine sponge, *Hippospongia* sp., which inhibits gastrulation of starfish embryos 7765
Ohta S. Uno M. Yoshimura M. Hiraga Y. and Ikegami S. Rhopaloic acid A: a novel norsesterterpene from a marine sponge, *Rhopaloeides* sp., which inhibits gastrulation of starfish embryos 2265
Ohta S. see Yamashita M. 7755
Ohta T. see Hori K. 5947
Ohuchi K. see Oi S. 6351
Ohwada T. Tsuji M. Okamoto I. and Shudo K. A remote substituent can determine magnitude of facial selectivity in benzobicyclo[2.2.2]octatrienes 2609
Ohyama M. Ichise M. Tanaka T. Iinuma M. and Burandt, Jr C. L. Davidiol D, first naturally occurring resveratrol pentamer isolated from *Sophora davidii* 5155
Oi S. Kashiwagi K. Terada E. Ohuchi K. and Inoue Y. Cationic palladium(II) complex-catalyzed hetero Diels–Alder reaction of dienes with aldehydes 6351
Oiarbide M. see Palomo C. 4565
Oiarbide M. see Palomo C. 6931
Oikawa H. Kagawa T. Kobayashi T. and Ichihara A. Synthetic study of AAL-toxins: efficient construction of two vicinal diol moieties by asymmetric dihydroxylation 6169
Oikonomakos N. G. see Blériot Y. 7155
Oishi S. see Iseki K. 9081
Ojea V. Fernández M^a C. Ruiz M. and Quintela J. M^a Conjugate additions of *E*-alkenylphosphonates to lithiated Schöllkopf's bislactim

ether: stereocontrolled access to *anti* 2-amino-3-substituted-4-phosphonobutanoic acids 5801
Ojea V. see Ruiz M. 5743
Ojika M. see Mutou T. 7299
Ojima J. see Higuchi H. 1617
Ojima J. see Higuchi H. 2601
Oka H. see Harada K. 3001
Oka K. see Mimaki Y. 1245
Oka M. see Tanaka Y. 881
Okabe Y. see Fujita K. 1825
Okada M. see Katagiri N. 1801
Okada S. Matsuda H. Murakami M. and Yamaguchi K. Botryoxanthin A, a member of a new class of carotenoids from the green microalga *Botryococcus braunii* Berkeley 1065
Okada Y. Taguchi H. and Yokoi T. Total synthesis of optically active deoxyaspergillic acid from dipeptidyl aldehyde 2249
Okaishi Y. see Hattori T. 2057
Okajima S. see Miura K. 487
Okajima T. see Fukazawa Y. 1257
Okami Y. see Hosoya Y. 9227
Okamoto I. see Ohwada T. 2609
Okamoto J. see Maeda H. 5381
Okamoto S. Sato H. and Sato F. Highly efficient synthesis of alka-1,3-dien-2-yltitanium compounds from alka-2,3-dienyl carbonates. A new, practical synthesis of 1,3-dienes and 2-iodo-1,3-dienes 8865
Okamoto S. see Kasatkin A. 1849
Okamoto S. see Kasatkin A. 6960
Okamoto S. see Kita Y. 1817
Okamura K. see Miyata O. 229
Okauchi T. see Ichikawa J. 8799
Okawa A. see Bose A. K. 6989
Okawa T. and Eguchi S. Facile synthesis of pyrazino[2,3-*e*][1,4]diazepine derivatives via the intramolecular aza-Wittig reaction 81
Okazaki R. see Goto K. 3141
Okazaki R. see Saiki T. 4039
Okazaki R. see Tokitoh N. 5145
Okazaki T. Terakawa E. Kitagawa T. and Takeuchi K. Solvolysis of [3-^{13}C]-3,4-dimethyl-4-homoadamantyl *p*-nitrobenzoate. Comparison of the barriers to the Wagner–Meerwein rearrangement of the secondary and tertiary 4-homoadamantyl cations 1035
Oki T. see Hori H. 2785
Oku A. see Abe M. 1833
Okuma K. Yamamoto T. Shirokawa T. Kitamura T. and Fujiwara Y. The first isolation of benzynethiobenzophenone adducts 8883
Okumura J. see Ueki M. 4953
Okumura M. see Kodama Y. 1061
Okumura M. see Kodama Y. 2515
Okumura Y. see Arimoto H. 4749
Okuno H. see Harayama H. 7287
Okuno T. see Konishi H. 8791
Okuno T. see Ohmori K. 3467
Okuro K. Dang T. Khumtaveeporn K. and Alper H. Cobalt carbonyl mediated carbonylative ring expansion reactions of 3,6-dihydro-2H-1,2-oxazines 2713
Okuyama K. see Yamashita M. 7755
Olivares J. M. see Audia J. E. 4121
Oliver A. M. see Ranasinghe M. G. 4797
Ollier M. see Contino C. 9049
Ollivier J. see Estieu K. 623
Olovsson G. see Borecka B. 2121
Olovsson G. see Gamlin J. N. 6037
Olsson T. see Johansson A. 7127
O'Meara G. W. see David D. M. 5417
Omura S. see Shiomi K. 1265
Omura S. see Smith, III A. B. 6461
Ondrácek J. see Dolensky B. 6939
Oniciu D. C. see Kobayashi S. 3731
Ono N. see Murashima T. 3133
Ono N. see Murashima T. 8391
Ono S. Shuto S. and Matsuda A. Highly stereoselective nucleophilic addition to cyclopropyl carbonyls: the facial selectivity in the cyclopropyl ketones is opposite to that in the corresponding aldehyde 221
Ono S. see Shuto S. 641
Ono T. see Shimizu I. 7115
Ono Y. see Toyota A. 8507
Onoda T. Shirai R. Koiso Y. and Iwasaki S. Asymmetric total synthesis of curacin A 4397
Onoue H. see Narukawa Y. 2589
Onoue H. see Nishi K. 2987
Onwueme K. see Wood J. L. 7335
Ooi C. K. see Moss G. P. 2877
Ooi T. see Kouda K. 6347
Orduna J. see Leriche P. 8861
Orduna J. see Martín N. 5979
Orfanopoulos M. see Angelis Y. 5991
Orfanopoulos M. see Stratakis M. 4105
Orfanopoulos M. see Stratakis M. 7159
Orfanopoulos M. see Vassilikogiannakis G. 3075
Oritani T. see Konno H. 5393
Oriyama T. Hori Y. Imai K. and Sasaki R. Nonenzymatic enantioselective acylation of racemic secondary alcohols catalyzed by an SnX_2–chiral diamine complex 8543
Orlinkov A. Akhrem I. Vitt S. and Vol'pin M. Unprecedented alkylation of pentafluorobenzene with propane 3363
Orosz G. see Hohman J. R. 8273
O'Rourke S. S. see McGee D. P. C. 1995
Orozco M. see Camps P. 8605
Ortea J. see Gavagnin M. 4259
Ortiz J. see Guijarro A. 5597
Ortiz P. R. see Zhao S.-H. 2725
Ortuño R. M. Ibarzo J. Alvarez-Larena A. and Piniella J. F. Unusual palladium-mediated methylene-addition to the carbonyl of a homochiral polyfunctionalized cyclohexenone, and intramolecular oxirane-ring opening. Efficient synthesis of novel enantiopure 3a,4,5,7a-tetrahydrobenzoxazole derivatives 4059
Osada H. see Shimizu T. 6755
Osada H. see Sodeoka M. 8775
Osako K. see Shimizu T. 6755
Osborn J. A. see Lorber C. Y. 853
Osborn J. A. see Sablong R. 4933
Osborn J. A. see Sablong R. 4937
Osborne S. A. see Hudson R. D. A. 9009
Oshima K. see Inoue R. 5377
Oshima K. see Takaku K. 6781
Osipov S. N. Sewald N. Kolomiets A. F. Fokin A. V. and Burger K. Synthesis of α-trifluoromethyl substituted α-amino acid derivatives from methyl 3,3,3-trifluoro-2-diazopropionate 615
Ostendorf M. see Louwrier S. 905
Osuga H. see Tanaka K. 5925
Osuka A. see Shinoda S. 4945
Otani T. see Iida K. 4997
Otani Y. see Chou T. 3871

O'Toole J. C. see Chou T. S. 17
Otsubo K. see Tanaka K. 3735
Ouazzani J. see Herlem D. 1241
Oudet P. see Nuss S. 5705
Ourtoule J.-C. Bourhis M. Vercauteren J. and Théodore N. First symmetrical bicyclo[6.6.0]tetradecane resveratrol tetramer from stalks of *Vitis vinifera* (Vitaceae) 4697
Outten R. A. see Van Arnum S. D. 8659
Overkleeft H. S. and Pandit U. K. A formal synthesis of castanospermine using an olefin metathesis cyclisation reaction as a key step 547
Owen D. J. see Mander L. N. 723
Owton W. M. see Crowley P. J. 5975
Oyarzabal J. see Palacios F. 4577
Ozaki F. see Tsunoda T. 2463
Ozola V. Reese C. B. and Song Q. Use of ammonium aryl *H*-phosphonates in the preparation of nucleoside *H*-phosphonate building blocks 8621**Lacombe J. M.** see Contino C. 9049
Ozturk T. An unusual reaction of Lawesson's reagent with 1,8-diketones: a synthesis of fused 1,4-dithiins and thiophenes 2821

Paddon-Row M. N. see Ranasinghe M. G. 4797
Padmakumar R. see Sreekumar R. 5281
Padwa A. and Semones M. A. An expedient synthesis of *epi*-eburnamenine via an intramolecular 1,4-dipolar cycloaddition reaction 335
Padwa A. see Cochran J. E. 2903
Padwa A. see Prein M. 6981
Pagano T. see Hill D. R. 787
Page P. C. B. Heer J. P. Bethell D. Collington E. W. and Andrews D. M. Corrigendum 2515
Page P. C. B. Purdie M. and Lathbury D. Enantioselective synthesis of α-hydroxyketones using the DiTOX asymmetric building block 8929
Pagnoni U. M. see Forti L. 2077
Paik S. and White E. H. Synthesis of β-aminosulfono-peptides activated through selective N-nitration of a taurine amide unit 4663
Paikoff S. J. Wilson T. E. Cho C. Y. and Schultz P. G. The solid-phase synthesis of *N*-alkylcarbamate oligomers 5653
Paikoff S. J. see Kim J.-M. 5305
Pain G. see Gennari C. 3747
Painter J. E. see Beddoes R. L. 9385
Paju A. see Lopp M. 7583
Pakulski Z. see Jonczyk A. 8909
Pal A. see Das S. 4421
Palacios F. Aparicio D. de los Santos J. M. and Rodríguez E. An improved and general method for the synthesis of α,β-unsaturated oximes from phosphine oxide allenes 1289
Palacios F. Ochoa de Retana A. M. and Oyarzabal J. A 'one pot' synthesis of polysubstituted pyridines from metallated alkylphosphonates, nitriles and α,β-unsaturated ketones 4577
Palacios F. and Rubiales G. Aza-Wittig reaction of *N*-vinylic phosphazenes with carbonyl compounds. Azadiene-mediated synthesis of dihydropyridines and pyridines 6379
Pale P. see Bertus P. 2019
Pale P. see Dalla V. 2777
Pale P. see Dalla V. 2781
Paleo M. R. and Sardina F. J. Enantiospecific synthesis of α-amino ketones and β-amino alcohols from the reaction of *N*-(9-phenylfluoren-9-yl)-alanine oxazolidinone with organolithium reagents 3403
Palermo M. G. Novel one-pot cyclization of *ortho* substituted benzonitriles to 3-amino-1,2-benzisoxazoles 2885
Paleta O. see Dolensky B. 6939
Palmer C. F. McCague R. Ruecroft G. Savage S. Taylor S. J. C. and Ries C. Unexpected stereoselectivity in the *cis* dihydroxylation of some 2-cyclopentene-1-carboxamides 4601
Palombi L. Arista L. Lattanzi A. Bonadies F. and Scettri A. Zeolite-catalyzed oxidation of benzylic and acetylenic alcohols with *t*-butyl hydroperoxide 7849
Palomo C. Oiarbide M. González A. García J. M. Berrée F. and Linden A. New chiral acetate imide enolate for stereoselective aldol reactions 6931
Palomo C. Oiarbide M. González A. García J. M. and Berrée F. *exo,exo*-2,3-Diaminoborneol-derived imidazolidinone as chiral auxiliary for asymmetric alkylations 4565
Palomo C. see Loupy A. 8177
Pamart L. see Carpentier J.-F. 167
Pan W. see Thamattoor D. M. 8333
Pan Z. and Still W. C. Macrocyclic oligomers of isophthalic acid and *trans*-1,2-diaminocyclohexane—building blocks for synthetic peptide receptors 8699
Pancrazi A. see Anies C. 5519
Pancrazi A. see Anies C. 5523
Pancrazi A. see Muller B. 3313
Pandey G. Reddy P. Y. and Das P. Synthesis and utilization of a novel glycine derived chiral precursor, based on a recyclable L-prolinol auxiliary, for the enantioselective preparation of α-amino acids and their *N*-methyl derivatives 3175
Pandey G. and Chakrabarti D. Further evidence on the PET cyclization of α-silylmethyl-amines tethered with non-activated olefins: demonstration by the total synthesis of (–)-retronecanol 2285
Pandey R. K. see Kozyrev A. N. 3781
Pandey R. K. see Kozyrev A. N. 6431
Pandey R. K. see Kozyrev A. N. 747
Pandit U. K. see Overkleeft H. S. 547
Panek J. S. and Zhu B. Synthesis of aromatic 1,2-diazines by inverse electron demand Diels– Alder reaction of polymer-supported 1,2,4,5-tetrazines 8151
Panigrahi G. B. see Zhao B. P. 3093
Pannecoucke X. see Knerr L. 5123
Pansare S. V. and Malusare M. G. Intramolecular imine cross-coupling in dibenzylidine sulfamides: synthesis of unsymmetrical 1,2-diaryl ethanediamines 2859
Panunzio M. see Bandini E. 4409
Panunzio M. see Camerini R. 2467
Paolesse R. Tagliatesta P. and Boschi T. Synthesis of unsymmetrical porphyrin dimers containing β-

octaalkyl and *meso*-tetraphenylporphyrin subunits 2637
Papa A. see Cozzi P. G. 4613
Papa F. see Ballini R. 3507
Papadopoulos M. see Jenner G. 1417
Papageorgiou G. K. see Nicolaides D. N. 1097
Papoutsis I. Spyroudis S. and Varvoglis A.
3-Aryliodonio-1,4-naphthoquinone-2-imides: a new class of aryliodonium 1,4 dipoles 913
Pappalardo S. Petringa A. Parisi M. F. and Ferguson G.
Novel 1,2-bridged calix[4]crowns in the 1,2-alternate conformation 3907
Pappalardo S. and Parisi M. F.
Inherently chiral calix[4]crown ethers 1493
Pappalardo S. see Arnecke R. 1497
Paquette L. A. Branan B. M. and Stepanian M.
Unprecedented loss of stereochemical integrity at a neighboring quaternary carbon during oxidation of a highly substituted cyclohexanol 1721
Paquette L. A. Doyon J. and Kuo L. H.
Sequenced reactions involving squarate esters. The first suggestion that helical equilibration within the advanced octatetraene intermediate is responsible for stereochemical control 3299
Parakka J. P. Kini A. M. and Williams J. M.
A facile route to aromatic ring-annelated bis(ethylenedithio)-tetrathiafulvalene derivatives 8085
Paredes R. Agudelo F. and Taborda G.
Facile new methods for introduction and removal of the diphenylmethyl group as a protective group of carboxylic acids 1965
Pareja C. see Lassaletta J. M. 5787
Pareschi P. see Nanni D. 9337
Paris J.-M. see Largeron M. 7499
Paris M. Fehrentz J.-A. Heitz A. Loffet A. and Martinez J.
Synthesis of N-protected γ-amino-β-keto-esters from urethane *N*-carboxy-anhydrides (UNCAs) 8489
Parisi M. F. see Fonte P. 6201
Parisi M. F. see Fonte P. 6205
Parisi M. F. see Kohnke F. H. 4593
Parisi M. F. see Pappalardo S. 1493
Parisi M. F. see Pappalardo S. 3907
Pariza R. J. see Hill D. R. 787
Park B. S. see Jung B. 4019
Park B. S. see Oh C. H. 8875
Park C.-H. see Givens R. S. 6259
Park H.-S. see Ha D.-C. 5723
Park H. B. see Kim K. S. 1249
Park I. Y. see Kim D. 1433
Park J. Lee S. Ahn K. H. and Cho C.-W.
Effects of solvent and lithiating agent on stereoselectivity in lithiation of chiral 1,1'-bis(oxazolinyl)ferrocenes 6137
Park J. W. see Jeong K.-S. 2795
Park K. B. see Yoon N. M. 8527
Park K. H. Jun K. Shin S. R. and Oh S. W.
2-Arylbenzoxazoles from phenolic Schiff's bases by thianthrene cation radical 8869
Park K. K. and Han S. Y.
Convenient reduction of azobenzenes and azoxybenzenes to hydrazobenzenes by sodium dithionite using dioctylviologen as an electron transfer catalyst 6721
Park S.-U. see Newcomb M. 819
Parker B. E. see Chou T. S. 17
Parker D. see Bates G. B. 267
Parker M.-C. Besson T. Lamare S. and Legoy M.-D.
Microwave radiation can increase the rate of enzyme-catalysed reactions in organic media 8383
Parlow J. J.
The use of anion exchange resins for the synthesis of combinatorial libraries containing aryl and heteroaryl ethers 5257
Parmar V. S. see Singh S. K. 7619
Parra A. see Aneja R. 5081
Parra-Rapado L. see Landais Y. 1205
Parra-Rapado L. see Landais Y. 1209
Parrain J.-L. see Thibonnet J. 7507
Parsons A. F. and Pettifer R. M.
A radical approach to *N*-desulfonylation 1667
Pascal R. see Sola R. 9195
Pascal, Jr R. A. Carter M. L. Johnson M. R. and Ho D. M.
A cyclophane bridged by an inwardly pyramidalized olefin 8125
Paschal J. W. see Neel D. A. 4891
Pasquet M. J. see Arnould J. C. 4523
Passafaro M. S. and Keay B. A.
A one pot *in situ* combined Shapiro–Suzuki reaction 429
Pastor A. see Ezquerra J. 5813
Pastor A. see Ezquerra J. 683
Pastor A. see Molina P. 7829
Patel B. see Headley A. D. 6673
Patel D. V. see Gordeev M. F. 4643
Patel D. V. see Szardenings A. K. 3635
Patel M. see Chu M. 3943
Patel M. see Chu M. 7229
Patel M. see Phife D. W. 5227
Patel P. see Beddoes R. L. 9385
Patel R. R. see Ku Y.-Y. 1949
Patel S. R. see Floyd C. D. 8045
Patel S. T. Percy J. M. and Wilkes R. D.
Functionally diverse monofluorinated vinylic compounds from trifluoroethanol 5183
Patel S. T. see Blades K. 6403
Paterson I. Feβner K. Finlay M. R. V. and Jacobs M. F.
Studies towards the synthesis of the zaragozic acids: a novel epoxide cyclisation approach to the formation of the bicyclic acetal core 8803
Paterson I. Gibson K. R. and Oballa R. M.
Remote, 1,5-*anti* stereoinduction in the boron-mediated aldol reactions of β-oxygenated methyl ketones 8585
Paterson I. Oballa R. M. and Norcross R. D.
Studies in marine macrolide synthesis: stereocontrolled synthesis of the AB-spiroacetal subunit of spongistatin 1 (altohyrtin A) 8581
Paterson I. and Nowak T.
anti Aldol reactions of α-alkoxymethyl ketones: application to the total synthesis of (+)-restricticin 8243
Pathi P. L. see Rama Rao A. V. 3023
Patil A. D. see Snider B. B. 6977
Patil S. S. see Chavan S. P. 2629
Patil V. J.
A simple access to trichloroacetimidates 1481
Patil V. J. and Mävers U.
Wittig reactions in the presence of silica gel 1281
Patin H. see Poulain S. 7703
Patino N. see Farèse A. 1413
Patney H. K. and Margan S.
Zirconium(IV) chloride–silica

catalysed thioacetalisation of carbonyl compounds 4621
Patonay T. see Hoffman R. V. 2381
Patra A. see Bhattacharjee A. 7635
Patra D. see Ghosh S. 2073
Patra D. see Tanaka T. 7809
Patrice T. see Poignant G. 7511
Patsiouras H. see Valerio R. M. 3019
Pattenden G. and Roberts L. Cascade radical processes leading to polycycle constructions. The total synthesis of spongian-16-one 4191
Pattenden G. see Boden C. D. J. 9111
Pattenden G. see Boyce R. J. 3501
Pattenden G. see Critcher D. J. 9107
Pattenden G. see Foote K. M. 275
Pattenden G. see Gill G. B. 9369
Pattenden G. see Hayes C. J. 271
Patterson J. W. see Smith D. B. 21
Patti A. see Lambusta D. 127
Patton R. W. see Phife D. W. 5227
Pätzel M. see Galley G. 6307
Paul S. Roy R. Suryawanshi S. N. and Bhakuni D. S. An efficient synthesis of functionalised decalin via cycloaddition reaction of D-glucose based dienes and 2-methoxycarbonyl-*p*-benzoquinone 4055
Paul V. J. see Nagle D. G. 6263
Pavlovic D. see Mlinaric-Majerski K. 4829
Paz M. M. Correa J. F. Cabeza M. I. and Sardina F. J. A versatile, enantioselective, stereocontrolled synthesis of (*1S,2R*)-imidazoleglycerol 9259
Pearson A. J. Gontcharov A. V. and Woodgate P. D. Studies on asymmetric conversion of arenes to functionalized cyclohexenones via chiral auxiliary-promoted nucleophilic additions to arene– chromium complexes 3087
Pearson A. J. and Bignan G. Studies on the applications of arene–ruthenium complexes in synthetic approaches to vancomycin: a mild procedure for the selective formation of chlorinated aryl ethers and triaryl diethers 735
Pearson D. J. see Taylor G. M. 1297
Pearson N. D. see Buck R. T. 7631
Pease J. E. see Greeves N. 2675
Pease J. E. see Greeves N. 5821
Pecchi S. see Mordini A. 5209
Pedersen M. L. see Berkowitz D. B. 4309
Pedersen S. see Xue L. 1921
Pederson C. Th. The formation of 1,2-propadiene-1,3-dithione (carbon subsulfide) from flash vacuum pyrolysis of 1,2-dithiole-3-thiones 4805
Pedgrift B. L. see Lammin S. G. 6815
Pedragosa-Moreau S. Archelas A. and Furstoss R. Microbiological transformations—XXXI. Synthesis of enantiopure epoxides and vicinal diols using fungal epoxide hydrolase mediated hydrolysis 3319
Pedram B. see Batey R. A. 6847
Pedregal C. see Ezquerra J. 683
Pedrosa R. see Andrés C. 9085
Pehk T. see Lopp M. 7583
Peláez-Lamamié de Clairac R. see Medarde M. 2663
Pellacani L. see Carducci M. 3777
Pellet-Rostaing S. Regnouf-de-Vains and Lamartine R. 2,2'-Bithiazolyl-*p-tert*-butylcalix[4]arene podands. Synthesis and fluorescence properties 5889
Pellissier H. Wilmouth S. and Santelli M. Preparation of trifluoromethyl-substituted alcohols from allylsilanes and trifluoroacetic anhydride 5107
Pellon P. Le Goaster C. and Toupet L. Diastereoselective synthesis of diphosphines, effect of their configuration in asymmetric catalysis 4713
Pelter A. Crump R. A. N. C. and Kidwell H. Chiral [2:2]paracyclophanes—I. Synthesis and characterisation of unique homochiral amino-acids derived from [2:2]paracyclophane 1273
Penadés S. see Morales J. C. 5011
Peper V. and Martens J. New chiral oxazaphospholidine oxides as highly efficient catalysts in the enantioselective reduction of ketones 8351
Peplow M. A. see Robertson J. 5825
Pera E. Lluís Torres J. and Clapés P. Enzymatic synthesis of carboxyglutamic acid containing peptides in organic media 3609
Péralez E. see Mattalia J.-M. 4717
Perboni A. see Camerini R. 2467
Perboni A. D. see Kennedy G. 7611
Percy J. M. see Blades K. 6403
Percy J. M. see Crowley P. J. 5975
Percy J. M. see Crowley P. J. 8233
Percy J. M. see Crowley P. J. 8237
Percy J. M. see Patel S. T. 5183
Pereira S. and Srebnik M. A study of hydroboration of alkenes and alkynes with pinacolborane catalyzed by transition metals 3283
Pérès M. see Duret P. 7043
Pérez F. see Camps P. 8601
Pérez F. see Camps P. 8605
Pérez J. M. López-Alvarado P. Alonso M. A. Avendaño C. and Menéndez J. C. Silica gel-supported hetero Diels–Alder reactions of quinolinetriones 6955
Perez M. Potier P. and Halazy S. Synthesis of arylpiperazines via nucleophilic aromatic substitution of (η^6-fluoroarene)tricarbonylchromium complexes 8487
Pérez M. see Moreno-Mañas M. 7449
Pérez N. see Raposo C. 1485
Pérez R. see Alvarez E. 2865
Pérez-Prieto J. Miranda M. A. Font-Sanchis E. Kónya K. and Scaiano J. C. Lamp versus laser photolysis of 1,3-dichloro-1,3-diphenylpropane in cyclohexane. Direct observation of 1,3-diphenylpropenyl radical 4923
Perfetti P. see Chauvet F. 3695
Periasamy M. Rama Reddy M. and Bhaskar Kanth J. V. Low valent titanium induced one pot syntheses of imidazolines 4767
Perlmutter P. Puniani E. and Westman G. The reactions of aryl acrylates under Baylis–Hillman conditions 1715
Perlmutter P. and Puniani E. Base-promoted acetal formation with phenyl salicylates 3755

Perlmutter P. see Mavropoulos I. 3751
Perry M. C. see Arterburn J. B. 7941
Perry N. B. Burgess E. J. and Tangney R. S. Cytotoxic 8,9-secokaurane diterpenes from a New Zealand liverwort, *Lepidolaena taylorii* 9387
Perry-O'Keefe H. see Kremsky J. N. 4313
Persichetti R. A. Lalonde J. J. Govardhan C. P. Khalaf N. K. and Margolin A. L. *Candida rugosa* lipase: enantioselectivity enhancements in organic solvents 6507
Persson M. P. see Bols M. 2097
Perumal P. T. see Majo V. J. 5015
Pesce A. see D'Annibale A. 7429
Peschke B. see Künzer H. 1771
Petasis N. A. and Lu S.-P. Stereocontrolled synthesis of substituted tetrahydropyrans from 1,3-dioxan-4-ones 141
Petasis N. A. and Zavialov I. A. Mild conversion of alkenyl boronic acids to alkenyl halides with halosuccinimides 567
Pete J.-P. see Hoffmann N. 2027
Pete J.-P. see Meyer C. 5885
Peterek M. see Wöhrle I. 7001
Petersen A. K. see Wasserman H. H. 6657
Petersen A. K. see Ziegler F. E. 809
Peterson B. C. see Roush W. R. 8989
Peterson M. A. see Robins M. J. 3921
Petit A. see Loupy A. 8177
Petit Y. see Imogaï H. 2573
Petringa A. see Pappalardo S. 3907
Petruš L. see Petrušová M. 2341
Petrušová M. BeMiller J. N. and Petruš L. A straightforward route to *N*-acetyl-D-glucosamine-derived *C*-β-D-glycosyl synthons 2341
Petter R. C. see Shapiro M. J. 4671
Pettifer R. M. see Parsons A. F. 1667
Peukert S. and Giese B. Radical-induced S_N1 substitution reactions 4365
Peyrottes S. Vasseur J.-J. Imbach J.-L. and Rayner B. Dramatic effect of the anomeric configuration on the thermal stability of duplex formed between novel dodecathymidine phosphoramidate ($P\text{-}NH_2$) and complementary DNA and RNA strands 5869
Pezzella A. see Napolitano A. 4241
Pfeffer M. see Chengebroyen J. 7263
Pfeiler D. see Adam W. 2113
Pfleiderer W. see Jungmann O. 8355
Phanijphand T. see Kaufman S. A. 8105
Phife D. W. Patton R. W. Berrie R. L. Yarborough R. Puar M. S. Patel M. Bishop W. R. and Coval S. J. Corrigendum 5227
Phillips G. B. and Wei G. P. Solid phase synthesis of benzimidazoles 4887
Piancatelli G. see De Mico A. 1889
Pianet I. see Vivas N. 2015
Piarulli U. see Gude M. 8589
Piattelli M. see Cunsolo F. 715
Piattelli M. see Geraci C. 3899
Piattelli M. see Geraci C. 7627
Piattelli M. see Lambusta D. 127
Piccialli G. see Adinolfi M. 5007
Piccialli V. see Graziano M. L. 527
Pichardo J. see Chu M. 3943
Pichon C. and Scott A. I. Synthesis of unsymmetrical dipyrrolyl sulfides 2891
Pichon M. Figadère B. and Cavé A. C-Glycosylation of cyclic *N*-acyliminium ions with trimethylsilyloxyfuran 7963
Pickering L. see Bell A. A. 8561
Pieken W. A. see McGee D. P. C. 1995
Piérard C. see Duret P. 7043
Pierre J.-L. see Provent C. 1393
Piers E. McEachern E. J. and Romero M. A. Intermolecular copper(I) chloride-mediated coupling of alkenyltrialkylstannane functions: a convenient synthesis of conjugated diene systems 1173
Piers E. and Kaller A. M. Bifunctional reagents in organic synthesis: stereocontrolled methods for the syntheses of functionalized *trans*-fused bicyclo[3.3.0]octane and bicyclo[4.3.0]nonane systems 5857
Pieters L. see Cimanga K. 1703
Pieters L. see Cimanga K. 3217
Pietra F. see N'Diaye I. 3049
Piettre S. R. Simple and efficient synthesis of 2,2-disubstituted-1,1-difluorophosphonates and phosphonothioates 2233
Piettre S. R. Efficient interconversion of α,α-difluoromethylenephosphonates and α,α-difluoromethylenephosphonothioates 4707
Piettre S. R. Girol C. and Schelcher C. G. A new strategy for the conversion of aldehydes into difluoromethyl ketones 4711
Piettre S. R. and Cabanas L. Reinvestigation of the Wadsworth–Emmons reaction involving lithium difluoromethylenephosphonate 5881
Piettre S. R. and Raboisson P. Easy and general access to α,α-difluoromethylene phosphonothioic acids. A new class of compounds 2229
Piga E. see Ghiron C. 3891
Pigeon P. and Decroix B. Benzothienoindolizidines via intramolecular aryl radical cyclization or palladium catalyzed cyclization 7707
Pigge F. C. see Rigby J. H. 2201
Pike R. E. see Saksena A. K. 6821
Pike R. E. see Saksena A. K. 5657
Pillai J. see Robertson J. 5825
Pillai V. N. R. see Ajayaghosh A. 6421
Pinaud N. see Fretté X. C. 2959
Pinciroli V. Ceccarelli W. Fusar-Bassini D. Menichincheri M. Mongelli N. and Vanotti E. New rearranged products from the methylation of 13-oxobaccatin III 9365
Pineschi M. see Crotti P. 1675
Ping X. see Kouda K. 4541
Pini D. see Minutolo F. 3375
Pini E. see Arcadi A. 3387
Piniella J. F. see Ortuño R. M. 4059
Pintér I. see Sallas F. 4011
Pinto M. T. see Cavaleiro J. A. S. 1893
Pires R. and Burger K. Synthesis of DL-isocysteine and some derivatives from thiomalic acid 8159
Pirotte B. see Masereel B. 7253
Pirrung M. C. and Lee Y. R. Formal total synthesis of (±)-aflatoxin B_2 utilizing the rhodium carbenoid dipolar cycloaddition 2391
Pitchumani K. Warrier M. Cui C. Weiss R. G. and Ramamurthy V. Photo-fries reaction of

naphthyl esters within zeolites 6251
Pitchumani K. and Ramamurthy V. Cation–guest interaction within zeolites: Li^+ exchanged zeolites are unique 5297
Pitchumani K. see Gamlin J. N. 6037
Pitt I. G. see Warrener R. N. 3773
Piva O. see Meyer C. 5885
Plachota P. see Kroutil W. 8379
Planeix J.-M. see Schneider R. 4721
Plantier-Royon R. and Portella C. Synthesis of carbohydrate-derived acylsilanes 6113
Plantier-Royon R. see Brigaud T. 6115
Plat D. see Du S. 3545
Plater M. J. Praveen M. Stein B. K. and Ballantine J. A. Trifluorohemifullerene: gas phase argon ion fragmentation of hexafluorotribenzotriphenylene 7855
Platz M. S. see Huang H. 8337
Platzer N. see Raussou S. 1599
Pleixats R. see Moreno-Mañas M. 7449
Plietker B. see Metz P. 3841
Plumet J. see Aceña J. L. 3043
Plumet J. see Aceña J. L. 105
Plumet J. see Aceña J. L. 8957
Plunian B. see Garnier L. 6699
Plunkett S. J. see Davis A. P. 9401
Pluskal M. see Kremsky J. N. 4313
Plusquellec D. see Denis C. 53
Pochet L. see Masereel B. 7253
Poh B.-L. and Thee K. K. No distinction between host and guest—the case of cyclodextrins complexing with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid 7433
Poh B.-L. and Thee K. K. Complexation of polyaromatic hydrocarbons with disodium 1,8-disulfonato-3,4,5,6-acridinetetracarboxylic acid in water 8451
Pohjala E. see Vepsäläinen J. 3533
Pohl S. see Kroke E. 3675
Pohmakotr M. and Takampon A. Destannylative acylation of 1-[(2-methoxyethoxy)methoxy]-2-(phenylsulfonyl)-2-(tributylstannyl)cyclopropane: a novel route to 3-acylfurans 4585
Poignant G. Bourseul A. Geze C. Le Plouzennec M. Le Maux P. Bondon A. Simonneaux G. Moinet C. Vonarx V. and Patrice T. Synthesis, stereochemical and photophysical studies of chiral mesoporphyrins 7511
Poitevin C. see Cossy J. 6709
Poitout L. Le Merrer Y. and Depezay J.-C. Synthesis of azasugars—I. Isomerization of polyhydroxylated piperidines 1609
Poitout L. Le Merrer Y. and Depezay J.-C. Synthesis of azasugars—II. Isomerization of polyhydroxylated azepanes 1613
Pokhilo N. D. see Denisenko M. V. 5187
Pola J. see Fajgar R. 3391
Polanco C. see Alcaide B. 6901
Polishook J. D. see Singh S. B. 8077
Pollini G. P. see Barco A. 7599
Polniaszek R. P. and Bell S. J. Remarkable examples of double diastereodifferentiation: application to the eudistomin and eudistomidin alkaloids 575
Polovinka M. P. Shal'ko A. A. Korchagina D. V. Gatilov Y. V. Shcherbukhin V. V. and Barkhash V. A. Rearrangements of ledene and aromadendrene in superacids 2631
Polushin N. N. Synthesis of functionally modified oligonucleotides from methoxyoxalamido precursors 3231
Polushin N. N. Smirnov I. P. Verentchikov A. N. and Coull J. M. Synthesis of oligonucleotides containing 2'-azido- and 2'-amino-2'-deoxyuridine using phosphotriester chemistry 3227
Polyak F. Dorofeeva T. Zelchans G. and Shustov G. Regio- and stereoselectivity of the formation of 1,3-oxazolidines in the reaction of *l*-ephedrine with phenylglyoxal. Unexpected rearrangement of 2-benzoyl-3,4-dimethyl-5-phenyl-1,3-oxazolidine to 4,5-dimethyl-3,6-diphenylmorpholin-2-one 8223
Pommelet J. C. see Jouen C. 2413
Ponasik J. A. Kassab D. J. and Ganem B. Synthesis of the antifouling polyamine pseudoceratidine and its analogs: factors influencing biocidal activity 6041
Ponde D. Borate H. B. Sudalai A. Ravindranathan T. and Deshpande V. H. Natural kaolinitic clay: a remarkable reusable solid catalyst for the selective functional protection of aldehydes and ketones 4605
Ponomarev G. V. see Yashunsky D. V. 7147
Ponticelli F. see Donati D. 5783
Poon H. S. see Harrowven D. C. 4281
Poon W. W. see Shepherd J. A. 2395
Poot M. see Gee K. R. 7905
Port M. see Calvo D. 1023
Porta O. see Clerici A. 3035
Portella C. see Brigaud T. 6115
Portella C. see Plantier-Royon R. 6113
Porter W. J. see Burke S. D. 343
Porto A. M. see de Oliveira C. M. A. 6427
Posner G. H. Tao X. Cumming J. N. Klinedinst D. and Shapiro T. A. Antimalarially potent, easily prepared, fluorinated endoperoxides 7225
Posner G. H. Wang D. González L. Tao X. Cumming J. N. Klinedinst D. and Shapiro T. A. Mechanism-based design of simple, symmetrical, easily prepared, potent antimalarial endoperoxides 815
Posner G. H. and Bull D. S. Molecular sieves promote stereocontrolled αα-disaccharide formation via direct dimerization of free sugars 6279
Posthumus M. A. see Griepink F. C. 411
Potapov V. K. see Stetsenko D. A. 3571
Potenza D. see Gude M. 8589
Pothion C. Fehrentz J.-A. Aumelas A. Loffet A. and Martinez J. Synthesis of pyrrolidine-2,4-diones from urethane *N*-carboxyanhydrides (UNCAs) 1027
Potier P. see Al Mourabit A. 9189
Potier P. see Perez M. 8487
Potnis P. V. see Ramana M. M. V. 1671
Poujol H. see Al Mourabit A. 9189
Poulain S. Noiret N. and Patin H. An easy access to symmetrical *Z*-olefins from phosphorus ylides 7703

Poumellec P. see O'Brien P. 5619
Poumellec P. see O'Brien P. 8057
Poupat C. see Al Mourabit A. 9189
Pour M. and Negishi E. A selective procedure for α-alkenylation of enones involving Pd-catalyzed alkenyl–alkenyl coupling and its application to a convergent and efficient synthesis of nakienone B 4679
Poveda L. see Chauret D. C. 7875
Powell N. A. and Rychnovsky S. D. Iodide acceleration in the Pd-catalyzed coupling of aromatic 1,2-ditriflates with alkynes: synthesis of enediynes 7901
Power P. see Wasserman H. H. 6657
Power T. D. and Sebastian J. F. Vinylic versus allylic deprotonation: an *ab initio* molecular orbital study of 2,3-dihydrooxepin and 1,3-cycloheptadiene 9127
Pozsgay V. see Dubois E. P. 3627
Prabhakar S. see Aires-de-Sousa J. 3183
Prager R. H. see Ang K. H. 675
Prahlad V. and Donaldson W. A. Enantioselective synthesis of the C11–C24 segment of macrolactin A via organoiron methodology 9169
Prajapati A. B. D. see Baruah B. 9087
Prajapati D. see Baruah M. 4559
Prajapati D. see Boruah A. 4203
Prandi J. see Mayer S. 3117
Prangé T. see Dorta R. L. 6021
Prangé T. see Ducrot P.-H. 3121
Prangé T. see Hanna I. 7013
Prangé T. see Hernández R. 6409
Prangé T. see Muller B. 3313
Prasad K. see Königsberger K. 9029
Prasad K. see Xu D. 5301
Prasain J. K. see Kadota S. 7283
Prasunamba P. L. see Mahesh Reddy G. 3355
Praveen M. see Plater M. J. 7855
Preckher G. see Malan C. 6705
Prein M. and Padwa A. Ligand-dependent site selectivity in the Rh(II)-catalyzed decomposition of a glycine-derived diazo acetoacetamide 6981
Prestwich G. D. see Thum O. 9017
Presutto M. see Gandolfi R. 917
Preuss K. E. see Yu D. W. 8845
Prévot-Halter I. Smith T. J. and Weiss J. Synthesis of a dicarboxylic acid receptor organized around a dioxomolybdenum core 1201
Pribush D. A. see Butcher J. W. 6685
Price D. A. see Hughes A. D. 7607
Priego J. see Fernández de la Pradilla R. 6793
Prieto P. see Díaz-Ortiz A. 1695
Prinzbach H. see Grabowski S. 7951
Prinzbach H. see Mathew T. 4491
Probert J. M. Rennex D. and Bradley M. Lanthionines for solid phase synthesis 1101
Procopio A. see Leggio A. 1277
Prokopowicz A. S. see Shawe T. T. 3823
Prota G. see Napolitano A. 4241
Prota G. see Napolitano A. 6799
Provent C. Chautemps P. Gellon G. and Pierre J.-L. Double Wittig reactions with 4-carboxybutylidene triphenylphosphorane as the key step in the synthesis of benzene derivatives *meta*disubstituted with ωω'-difunctionalized six-carbon chains 1393
Prowse W. G. see Ezquerra J. 5813
Prunet J. see Muller B. 3313
Pryde D. C. Henry S. S. and Meyers A. I. Synthesis of 2-tetralones via a novel 1,2-carbonyl transposition of 1-tetralones 3243
Puar M. S. see Phife D. W. 5227
Puar M. S. see Chu M. 3943
Puar M. S. see Chu M. 7229
Puar M. S. see Tagat J. R. 8459
Puar M. S. see Tagat J. R. 8463
Pucci B. see Contino C. 9049
Pulpoka B. Asfari Z. and Vicens J. Synthesis of unsymmetrical calix[4]arene cryptand crown-6 in 1,3-alternate conformation 6315
Pulpoka B. Asfari Z. and Vicens J. Synthesis of 1,3-alternate calix[4]-bis-cryptand as a cylindrical macropentacyclic receptor 8747
Puniani E. see Perlmutter P. 1715
Puniani E. see Perlmutter P. 3755
Püntener K. Schwink L. and Knochel P. New efficient catalysts for enantioselective transfer hydrogenations 8165
Punzalan E. R. see Bailey W. F. 5435
Punzi A. see Fiandanese V. 8455
Purdie M. see Page P. C. B. 8929
Püschl A. see Kehler J. 8041
Putnikovic B. see Grigg R. 695
Pyne S. G. see David D. M. 5417
Pyne S. G. see Ung A. T. 6209

Qabar M. N. and Kahn M. Synthesis of (*S,S*)-3-prolylazetidin-2-one: a key component in the synthesis of an HIV gp120 constrained immunogen 965
Qi H. see Davis F. A. 4345
Qi L. see Wu M. 7409
Qing F. see Yue X. 8213
Qiu D. Gandhi S. S. and Koganty R. R. βGal(1–3)GalNAc block donor for the synthesis of TF and α sialyl(2–6)TF as glycopeptide building blocks 595
Qiu W. and Burton D. J. A facile and general preparation of α,α-difluoro benzylic phosphonates by the CuCl promoted coupling reaction of the (diethylphosphonyl)difluoromethylcadmium reagent with aryl iodides 2745
Qiu W. see Liao S. 7917
Quadrelli P. Gamba Invernizzi A. and Caramella P. A mild oxidation of nitrile oxides: a new synthetic route to nitroso carbonyl intermediates 1909
Quaranta L. see Mann A. 2651
Quayle P. see Beddoes R. L. 9119
Quayle P. see Beddoes R. L. 9385
Quayle P. see Gilbert P. 9115
Quéguiner G. see Mongin F. 6695
Querci C. see Chiavetto L. B. 1091
Quevillon T. M. and Weedon A. C. The photochemistry of 3-nitro-2-cyclohexenone 3939
Quiclet-Sire B. Saicic R. N. and Zard S. Z. A convenient synthesis of

trifluoromethyl aryl sulfides 9057
Quiclet-Sire B. Saunier J.-B. and Zard S. Z. β-Lactams by a nickel powder/acetic acid mediated radical cyclisation 1397
Quiclet-Sire B. see Denieul M.-P. 5495
Quiclet-Sire B. see Laso N. M. 1605
Quiclet-Sire B. see Liard A. 5877
Quintela J. M[a] see Ojea V. 5801
Quintela J. M[a] see Ruiz M. 5743
Quirion J.-C. see Micouin L. 849
Quiroga M. L. see Alvarez-Ibarra C. 6573

Rabah G. A. and Koser G. F. Facile synthetic entry into the 1,3-dihydro-3-methyl-3-phenyl-1,2-benziodoxole family of λ^3-iodanes 6453
Rabanal F. DeGrado W. F. and Dutton P. L. Use of 2,2'-dithiobis(5-nitropyridine) for the heterodimerization of cysteine containing peptides. Introduction of the 5-nitro-2-pyridinesulfenyl group 1347
Rabideau P. W. see Liu C. Z. 3437
Raboisson P. see Piettre S. R. 2229
Racioppi R. see Bonini C. 2487
Radel P. A. and Kahl S. B. A useful modification of the attached proton test ^{13}C NMR experiment: unambiguous peak assignments for carbons with large $^1J_{(CH)}$ values 6623
Rademann J. and Schmidt R. R. A new method for the solid phase synthesis of oligosaccharides 3989
Radhakrishnan K. V. see Nair V. 5623
Radisson X. see Mutti S. 8743
Rafferty S. W. see Crimmins M. T. 5649
Rageot A. see Cereghetti M. 5343
Rageot A. see Cereghetti M. 5347
Rahman M. M. see Gabbutt C. D. 1313
Rainey T. F. see Audia J. E. 4121
Rajagopal D. see Marchand A. P. 467
Rajesh S. Reddy M. M. and Iqbal J. A one pot cobalt catalyzed regio- and stereoselective synthesis of oxazolidin-2-thiones from alkenes and trimethylsilylisothiocyanate 7315
Rajopadhye M. see Singh P. R. 4117
Rakitin O. A. Rees C. W. and Vlasova O. G. Direct synthesis of 2-cyanobenzimidazoles and the generation of S_2 4589
Rakov I. M. see Lermontov S. A. 4051
Raku N. see Nemoto H. 6355
Ram V. J. and Goel A. Ring transformation reactions—IV. 6-Aryl-3-methoxycarbonyl-4-methylthio-2*H*-pyran-2-one, a novel synthon for the synthesis of 1,3-terphenyls from aryl ketones 93
Ramachandran P. V. Chen G.-M. Lu Z.-H. and Brown H. C. An efficient preparation of optically pure C_2-symmetric aromatic diols by the asymmetric reduction of diacylaromatic compounds with *B*-chlorodiisopinocampheylborane 3795
Ramachandran P. V. Chen G.-M. and Brown H. C. Efficient general asymmetric syntheses of 3-substituted 1(3*H*)-isobenzofuranones in very high enantiomeric excess 2205
Ramachandran P. V. Xu W. and Brown H. C. Contrasting steric effects of the ketones and aldehydes in the reactions of the diisopinocampheyl enolborinates of methyl ketones with aldehydes 4911
Ramachandran P. V. see Dhokte U. P. 8345
Ramachandran P. V. see Weissman S. A. 3791
Ramachandran R. see Denk M. K. 9025
Ramadas K. Lac sulfur on alumina–triethanolamine—an effective reagent for the synthesis of substituted guanidines 5161
Ramadas K. Velmathi S. and Sukanya S. Corrigendum 7665
Ramage R. see MacDonald A. A. 4815
Ramamurthy V. see Gamlin J. N. 6037
Ramamurthy V. see Li X. 5235
Ramamurthy V. see Pitchumani K. 5297
Ramamurthy V. see Pitchumani K. 6251
Ramamurthy V. see Zhang Z. 4861
Ramana M. M. V. and Potnis P. V. Tandem acylation–cyclo-alkylation with cyclohexene 1-acetic acid: a new entry to aporphine alkaloids 1671
Ramanaiah K. C. V. see Marchand A. P. 8101
Ramanaiah K. C. V. see Moss R. A. 5849
Ramanjulu J. M. and Joullié M. M. Analogs of the β-turn of the cyclodepsipeptide didemnin B 311
Ramasamy K. S. see Manoharan M. 7675
Ramaswamy A. V. see Chavan S. P. 233
Ramaswamy A. V. see Chavan S. P. 237
Rama Rao A. V. Reddy K. L. Rao A. S. Vittal T. V. S. K. Reddy M. M. and Pathi P. L. Synthetic studies towards glycopeptide antibiotics: synthesis of the 16-membered cyclic tripeptide (DOEG ring) system of teicoplanin 3023
Rama Rao A. V. see Gurjar M. K. 6615
Rama Rao A. V. see Venkateswara Rao B. 8613
Rama Reddy M. see Periasamy M. 4767
Ramchandani R. K. Wakharkar R. D. and Sudalai A. $AlCl_3$-Catalyzed regiospecific alkylation of aromatics with chlorobenzotrifluorides: a high yield preparation of 1,1-dichlorodiphenylmethanes 4063
Ramesh N. G. see Bakkeren F. J. A. D. 8003
Ramesh U. Kano K. Suzaki T. Miyazaki Y. and Washio Y. A simple synthesis of 16-unsaturated corticosteroids 8403
Ramezanian M. S. see Dávila A. 2517
Ramig K. Dong Y. and Van Arnum S. D. A convenient preparation of cyclobutyl ketones: naphthalene-catalyzed reductive cyclization of substituted 1,4-dihalobutanes 443
Ramig K. see Van Arnum S. D. 8659
Ramírez A. see Bennasar M.-L. 6611
Ramírez de Arellano M. C. see Molina P. 7829
Ramos A. see Vega J. A. 6413
Ramos A. C. see Medarde M. 2663
Ramsden C. A. Sargent B. J. and Wallett C. D. A novel decarbonylation of heterocyclic pyruvic acid derivatives using sodium perborate 1901

Ranasinghe M. G. Oliver A. M. Rothenfluh D. F. Salek A. and Paddon-Row M. N. A synthetic strategy for the construction of a novel series of buckminsterfullerene (C_{60}) ball-and-chain molecules containing the porphyrin chromophore 4797
Ranasinghe M. G. see Grice I. D. 1087
Rane A. M. see Soderquist J. A. 2561
Rane D. F. see Jao E. 5661
Rane R. A. see Master H. E. 9253
Ranganathan S. Kundu D. Tamilarasu N. Nagaraj R. Dhople V. M. and Jaganadham M. V. The gramicidin pore: selective tryptophan replacement with aspartic acid 5199
Rani A. Kumar B. Suryawanshi S. N. and Bhakuni D. S. Diels–Alder reaction of *in situ* generated *p*-benzoquinones with isoprenoidal dienol acetate: novel synthesis of 2-isoprenoidal naphthalene-5,8-quinols 8037
Rankovic Z. see Morphy J. R. 3209
Ranu B. C. Majee A. and Das A. R. A convenient synthesis of β,γ-unsaturated ketones through zinc-mediated allylation of acid chlorides 1109
Rao A. S. see Rama Rao A. V. 3023
Rao C. see Liu C.-F. 933
Rao P. and Maitra U. Novel functionalised Tröger's bases: synthesis of a new class of Tröger's base analogues containing dicarboxyl functionality 5791
Rao P. S. V. S. see Sarkar T. K. 6607
Rao V. P. see Asato A. E. 419
Rao Citineni J. see Stevenson T. M. 8375
Raposo C. Almaraz M. Martín M. Caballero Mª C. and Morán J. R. Catalysis of nucleophilic addition of pyrrolidine to 2-(5*H*)-furanone through chromenone cleft-type receptors 6947
Raposo C. Almaraz M. Pérez N. Martín M. Weinrich V. Grande M. Caballero Mª. C. and Morán J. R. Cleft type receptors for butenolides based on chromenone derivatives 1485
Rappoport Z. see Cerioni G. 5797
Raptopoulou C. P. see Nicolaides D. N. 1097
Rasmussen P. H. see Nielsen J. 3351
Rastelli A. see Gandolfi R. 1321
Rastelli A. see Gandolfi R. 517
Rasul R. see Grigg R. 4609
Rataj H. see Mellor J. M. 2615
Rataj H. see Mellor J. M. 2619
Ratcliffe A. J. see Lammin S. G. 6815
Rath N. see Murray R. W. 8671
Ratledge C. see Lane S. J. 1
Ratovelomanana-Vidal V. see Gautier I. 7721
Raussou S. Urbain N. Mangeney P. Alexakis A. and Platzer N. Preparation of chiral hexahydroquinolizinones and tetrahydroindolizinones by regio- and diastereoselective sonochemical cyclization of chiral dihydropyridines 1599
Ravasio N. Antenori M. Gargano M. and Mastrorilli P. Cu/SiO_2: an improved catalyst for the chemoselective hydrogenation of α,β-unsaturated ketones 3529
Ravelo J. L. Regueiro A. Rodríguez E. de Vera J. and Martín J. D. Synthetic studies towards ciguatoxin via acetal/γ-oxovinyl stannane condensation: a convergent approach 2869
Ravikrishna Ch. see Mehta G. 2655
Ravikumar V. T. Cheruvallath Z. S. and Cole D. L. 4-Cyano-2-butenyl group: a new type of protecting group in oligonucleotide synthesis via phosphoramidite approach 6643
Ravikumar V. T. see Krotz A. H. 1999
Raviña E. see Masaguer C. F. 5171
Ravindranathan T. see Chavan S. P. 233
Ravindranathan T. see Chavan S. P. 237
Ravindranathan T. see Chavan S. P. 2629
Ravindranathan T. see Kalkote U. R. 6785
Ravindranathan T. see Ponde D. 4605
Ravoo B. J. see Coudret J. L. 2425
Rawal V. H. see Dufour C. 7867
Rawdah T. N. and El-Faer M. Z. The static and dynamic conformational properties of *cis,cis,trans*-1,5,9-cyclododecatriene 4267
Rayner B. see Peyrottes S. 5869
Raynham T. M. see Attwood M. R. 2731
Reamer R. A. see Karady S. 8277
Reamer R. A. see Rossen K. 6843
Réau R. see Bon E. 1217
Rebien F. see Linker T. 8363
Reboul V. see Guillou C. 4515
Recupero F. see Araneo S. 6897
Recupero F. see Araneo S. 7425
Reddy B. S. N. see Kamal A. 2281
Reddy B. S. N. see Kamal A. 6803
Reddy B. S. P. see Kamal A. 2281
Reddy B. S. P. see Kamal A. 6803
Reddy Ch. K. see Riguet E. 5865
Reddy G. P. see Jacobson I. C. 8263
Reddy G. V. see Davis F. A. 4349
Reddy G. V. see Davis F. A. 5473
Reddy J. P. see Engler T. A. 327
Reddy K. L. see Rama Rao A. V. 3023
Reddy K. S. see Mehta G. 2289
Reddy M. M. see Rajesh S. 7315
Reddy M. M. see Rama Rao A. V. 3023
Reddy M. P. Farooqui F. and Hanna N. B. Elimination of transamination side product by the use of dC^{Ac} methylphosphonamidite in the synthesis of oligonucleoside methylphosphonates 8691
Reddy N. K. see Kabalka G. W. 2181
Reddy P. S. N. see Mahesh Reddy G. 3355
Reddy P. Y. see Pandey G. 3175
Reddy R. E. see Adamczyk M. 2325
Reddy R. S. Iguchi S. Kobayashi S. and Hirama M. Palladium-catalyzed coupling of alkenyl iodides with ethynyl oxiranes: synthesis of epoxy enediyne core intermediates related to neocarzinostatin chromophore 9335
Reddy T. J. see Srikrishna A. 1679
Redpath J. see Casaschi A. 4413
Redpath J. see Grigg R. 4609
Reed J. E. see Bell A. S. 123
Reed S. C. and Modarelli D. A. Conformational effects on the excited state 1,2-hydrogen

migration in alkyldiazomethanes 7209
Rees C. W. see Gillies I. 4065
Rees C. W. see Rakitin O. A. 4589
Rees D. C. see Barn D. R. 3213
Rees D. C. see Morphy J. R. 3209
Rees D. C. see Stowell M. H. B. 307
Reese C. B. see Liu X. 925
Reese C. B. see Ozola V. 8621
Reetz M. T. Breinbauer R. and Wanninger K. Suzuki and Heck reactions catalyzed by preformed palladium clusters and palladium/nickel bimetallic clusters 4499
Reetz M. T. Strack T. J. Mutulis F. and Goddard R. Asymmetric dihydroxylation of chiral γ-amino α,β-unsaturated esters: turning the mismatched into the matched case via protective group tuning 9293
Reggelin M. and Brenig V. Towards polyketide libraries: iterative, asymmetric aldol reactions on a solid support 6851
Reginato G. Mordini A. Degl'Innocenti A. and Caracciolo M. Corrigendum 1325
Reginato G. see Mann A. 2651
Reginato G. see Mordini A. 5209
Regnouf-de-Vains J.-B. and Lamartine R. Wittig reaction on calixarene upper rim. Access to conjugated bipyridyl and pyridyl podands 6311
Regnouf-de-Vains J.-B. see Pellet-Rostaing S. 5889
Regueiro A. see Ravelo J. L. 2869
Reid G. see Mellor J. M. 2615
Reid R. G. see Kelly N. M. 1517
Reider P. J. see Brands K. M. J. 2919
Reider P. J. see Davies I. W. 1725
Reider P. J. see Davies I. W. 813
Reider P. J. see Rossen K. 6843
Reider P. J. see Senanayake C. H. 3271
Reider P. J. see Wells K. M. 6439
Reif B. see Köck M. 363
Reinhardt K. R. see Spaltenstein A. 1343
Reinhold U. see Hanessian S. 8967
Reinhold U. see Hanessian S. 8971
Reinhoudt D. N. see Boerrigter H. 5167
Reinhoudt D. N. see Shivanyuk A. N. 9341
Renaud P. and Stojanovic A. Stereoselectivity of the reactions of *N*-phthaloyl iminium ions and amino-substituted radicals derived from threonine 2569
Renaud P. see Gerster M. 6335
Renaud P. see Stojanovic A. 9199
Renaud P. see Zahouily M. 8387
Renil M. and Meldal M. POEPOP and POEPS: inert polyethylene glycol crosslinked polymeric supports for solid synthesis 6185
Rennex D. see Probert J. M. 1101
Renouard T. see Dupau P. 7503
Repic O. see Königsberger K. 9029
Repic O. see Xu D. 5301
Resnati G. see Arnone A. 3903
Resta S. see D'Annibale A. 7429
Reyé C. see Chauhan M. 845
Reynolds W. F. see Henry G. E. 8663
Rezende M. C. Dall'Oglio E. L. and Zucco C. Puzzling formation of bisimidazole derivatives from hexachloroacetone and diamines 5265
Rhie D. Y. see Kim D. Y. 653
Rhihil A. see Sebti S. 3999
Rhihil A. see Sebti S. 6555
Rhim C. Y. see Oh C. H. 8875
Ribeiro A. A. see Zoretic P. A. 1751
Ribeiro A. A. see Zoretic P. A. 7909
Ricci M. see Chiavetto L. B. 1091
Riccio R. Kinnel R. B. Bifulco G. and Scheuer P. J. Kakelokelose, a sulfated mannose polysaccharide with anti-HIV activity from the pacific tunicate *Didemnum molle* 1979
Richards C. J. see Locke A. J. 7861
Richardson J. L. see Mascal M. 3505
Riche C. see Sageot O. 7019
Richert C. see Baeschlin D. K. 1591
Rickards R. W. see Henschke J. P. 3557
Rico R. and Bermejo F. Stereoselective preparation of (5*E*)- and (5*Z*)-5-benzylidene-3-methyl-3-pyrrolin-2-ones. Application to the synthesis of ampullicine and isoampullicine 5809
Rico R. see Suau R. 3575
Rico R. see Suau R. 9357
Rider P. see Shaw-Ponter S. 1871
Riebel B. see Seelbach K. 1377
Riebel P. Weber A. Troll T. Sauer J. Breu J. and Nöth H. Umlagerungen von 2,5-diarylsubstituierten Dicyano[7,7-dimethyl-3,4-diazabicyclo[4.1.0]hept-2,4-dien-3-ium-3-yl]methaniden in protischen Solventien 1587
Riebel P. Weber A. Troll T. Sauer J. and Breu J. 3,4-Diazanorcaradiene als Vorstufen neuer stabiler Azomethinylide 1583
Riego J. see Lonergan D. G. 6109
Riego J. M. Sedin Z. Zaldívar J. M. Marziano N. C. and Tortato C. Sulfuric acid on silica-gel: an inexpensive catalyst for aromatic nitration 513
Rieke R. D. see Kim S.-H. 2197
Riermeier T. H. see Beller M. 6535
Ries C. see Palmer C. F. 4601
Rigby J. H. de Sainte Claire V. and Heeg M. J. Studies on electrocyclization in bicyclo[4.4.1]undeca-2,4-diene and bicyclo[4.2.1]nona-2,4-diene systems 2553
Rigby J. H. and Pigge F. C. A novel entry into the 6-azabicyclo[3.2.1]octane system via radical rearrangement of a tropane derivative 2201
Rigby J. H. and Sugathapala P. Lipase-mediated resolution and higher-order cycloaddition of substituted tricarbonyl (η^6-cycloheptatriene)chromium(0) complexes 5293
Riggs J. A. Hossler K. A. Smith B. D. Karpa M. J. Griffin G. and Duggan P. J. Nucleotide carrier mixture with transport selectivity for ribonucleoside-5'-phosphates 6303
Righetti P. P. see Desimoni G. 3027
Righi G. D'Achille R. and Bonini C. Regioselective opening of 3-substituted *N*-ethoxycarbonyl aziridine-2-carboxylates with metal halides toward the preparation of α and β-amino acids 6893
Righi G. see Bonini C. 2487
Rigo B. El Ghammarti S. and Couturier D. On the cyclization of acyliminium salts derived from pyroglutamic acid 485
Riguet E. Klement I. Reddy Ch. K. Cahiez G. and

Knochel P.
New mixed metal (Mn/Cu) catalyzed stereoselective cyclizations 5865
Riopelle R. J. see Gorin B. I. 4647
Riou A. see Leriche P. 5115
Riou A. see Leriche P. 8861
Ripka W. C. see Tamura S. Y. 4109
Ripoche I. Bennis K. Canet J.-L. Gelas J. and Troin Y.
Diastereoselective elaboration of 2,3,4-substituted piperidines using diene iron tricarbonyl complexes. Total synthesis of (±)-dienomycin C and (±)-4-*epi*-dienomycin C 3991
Ripoll J.-L. see Lefèvre V. 7017
Ripoll J.-L. see Systermans A. 3317
Ripoll M. M. see Luis J. G. 4213
Rivera-Sagredo A. see New A. P. 3039
Rivière F. Romanenko V. D. Mazières M.-R. Sanchez M. and Wolf J.-G.
The synthesis of pentadienylium salts via reactions of (5-ethoxy-1,5-diaryl-2,4-pentadienylidene)ethyloxonium perchlorate with hydrazines 6717
Rivory L. P. see Bourzat J.-D. 6327
Rizzon C. see Bartnik R. 8751
Roan G. A. see Gill G. B. 9369
Robb E. W. see Bose A. K. 6989
Robert A. see Boukhris S. 4693
Robert J. see Bourzat J.-D. 6327
Robert J.-M. see Belt S. T. 4755
Roberti M. see Kozikowski A. P. 5333
Roberts B. P. see Haque M. B. 9123
Roberts D. Alvarez M. and Joule J. A.
Synthesis of 6-chloro-1,3,4,5-tetrahydro-7,8-dimethoxy-1-methylpyrrolo-[4,3,2-*de*]quinoline from a quinoline; formal total syntheses of batzelline C, isobatzelline C, discorhabdin C and makaluvamine D 1509
Roberts E. see Hudson R. D. A. 9009
Roberts F. E. see Senanayake C. H. 3271
Roberts L. see Pattenden G. 4191
Roberts M. A. see Nagle D. G. 6263
Roberts R. S. see Fleming I. 9395
Robertson J. O'Connor G. and Middleton D. S.
Silicon tethered type II ene cyclisations 3411
Robertson J. Peplow M. A. and Pillai J.
The synthesis of (±)-heliotridane and (6*S*,7*S*)-dihydroxyheliotridane via sequential hydrogen atom abstraction and cyclisation 5825
Robertson M. see Shaw-Ponter S. 1867
Robins M. J. Sarker S. Xie M. Zhang W. and Peterson M. A.
Synthesis of 2',3'-fused (3.3.0) γ-butyrolactone-nucleosides and coupling with amino-nucleosides to give amide-linked nucleotide-dimer analogues 3921
Robinson A. Li H.-Y. and Feaster J.
The first practical asymmetric synthesis of *R*- and *S*-warfarin 8321
Robinson P. M. see Shawe T. T. 3823
Robl J. A. Sieber-McMaster E. and Sulsky R.
Synthetic routes for the generation of 7,7-dialkyl azepin-2-ones 8985
Roboz J. see Weisz I. 563
Roby J. see Loyer N. 3415
Rochdi A. see Lazrek H. B. 4701
Rock M. H. see Bégué J.-P. 171
Rock R. S. see Stowell M. H. B. 307
Rodebaugh R. Debenham J. S. and Fraser-Reid B.
Debenzylation of complex oligosaccharides using ferric chloride 5477
Rodilla J. M. L. see Urones J. G. 1659
Rodrigues J. A. R. see de Oliveira Filho A. P. 5029
Rodríguez A. see Fernández de la Pradilla R. 6793
Rodríguez A. D. and Soto J. J.
Isolation and structure of aceropterine, a rare pseudopterane alkaloid from the Caribbean sea plume *Pseudopterogorgia acerosa* (Pallas) 2687
Rodríguez E. see Palacios F. 1289
Rodríguez E. see Ravelo J. L. 2869
Rodriguez L. C. see Kerr R. G. 8301
Rodríguez M. A. see Bernabeu M. C. 3595
Rodriguez M. J. and Zweifel M. J.
Trimethylamine *N*-oxide: a novel reagent for the promotion of the retro-aldol reaction of R106-1 (LY295337) 4301
Rodríguez R. and Bermejo F.
Decarbonylation of α-tertiary amino acids. Application to the synthesis of polyhydroxylated indolizidines 5581
Rodriguez Ramos J. H. see García Ruano J. L. 4569
Roe M. B. see Magnus P. 303
Rogers R. D. see Brogan J. B. 5053
Rohmer M. see Herrmann D. 1791
Roignant A. see Gardinier I. 7711
Rojas Wahl R. U. see Barton D. H. R. 1133
Rojo J. see Carretero J. C. 3179
Rokach J. see Adiyaman M. 4849
Rokach J. see Hwang S.-W. 779
Rokach J. see Shi X.-X. 4331
Rölfing K. see Bojack G. 6103
Rolland-Fulcrand V. see Hua T. D. 175
Rollin P. see Mavratzotis M. 5699
Romagnoli R. see Barco A. 7599
Romanenko V. D. see Rivière F. 6717
Romanovskis P. see Spatola A. F. 591
Romero A. G. Darlington W. H. Jacobsen E. J. and Mickelson J. W.
Oxidative cyclization of acyclic ureas with bis(trifluoroacetoxy)iodobenzene to generate N-substituted 2-benzimidazolinones 2361
Romero M. A. see Piers E. 1173
Romo D. see Schmitz W. D. 4857
Roncali J. see Elandaloussi E. H. 6121
Rong X. X. see Dolbier, Jr W. R. 5321
Rood G. A. DeHaan J. M. and Zibuck R.
Copper(II) bromide on alumina: a new reagent for bromolactonization 157
Rooke S. see Clark A. J. 909
Roque J.-P. see Winum J.-Y. 1781
Rosa A. see Curci R. 115
Rosati O. see Cabri W. 4785
Roschangar F. see Ciufolini M. A. 8281
Rose E. see Besson L. 3307
Rose-Munch F. see Besson L. 3307
Rosegay A. see Hirschmann R. 5637

Rosen S. D. see Manning D. D. 1953
Rosenberg I. see Endová M. 3497
Rosenberg M. G. Kam S. M. and Brinker U. H. Carbenes in constrained systems—IV. Encapsulation of an asymmetric diazirine: reactivity of 2-methylcyclohexanylidene 3235
Rosenberg M. G. see Kupfer R. 6647
Rosenberg R. E. and Vilardo J. S. The importance of entropy in stereoselection. Reduction of *tert*-butylcyclohexanone by lithium aluminum hydride 2185
Ross A. A. see Shawe T. T. 3823
Rossen K. Reamer R. A. Volante R. P. and Reider P. J. Mechanistic studies on the diastereoselective halohydroxylation of γ-δ unsaturated carboxamides 6843
Rossi E. see Arcadi A. 3387
Rossi E. see Arcadi A. 6811
Rossi P. see Mutti S. 3125
Rossi R. H. see Aimar M. L. 2137
Rossi T. see Ghiron C. 3891
Rossi T. see Kennedy G. 7441
Rossignol S. see Dujardin G. 4007
Rosso C. see Carofiglio T. 8019
Rotello V. M. see Deans R. 4435
Roth H. D. see Weng H. 4895
Roth H. D. see Zhou D. 2385
Roth M. Damm W. and Giese B. The Curtin–Hammett principle: stereoselective radical additions to alkenes 351
Rothenfluh D. F. see Ranasinghe M. G. 4797
Rottmann A. and Liebscher J. Synthesis of enantiomerically pure ω-amino acids by asymmetric α-alkylation of chiral ω-aminoalkyloxazolines 359
Roubaud C. see Vanelle P. 3323
Roulet J.-M. see Montalbetti C. 2225
Roush W. R. Champoux J. A. and Peterson B. C. Diastereoselective synthesis of the *cis*-octahydronaphthalene nucleus of superstolides A and B 8989
Roush W. R. and Works A. B. Diastereoselective synthesis of the *trans-anti-cis*-decahydro-*as*-indacene ring system via the transannular Diels–Alder reaction of a functionalized (*E,E,E*)-cyclododeca-1,6,8-triene 8065
Roussakis C. see Fretté X. C. 2959
Rousseau G. see Brunel Y. 3853
Rousselet G. Chassagnard C. Capdevielle P. and Maumy M. Copper-catalyzed olefin epoxidation by dioxygen or amine *N*-oxide 8497
Roversi P. see Marchionni C. 4149
Rowan S. J. Brady P. A. and Sanders J. K. M. Synthesis and kinetic cyclisation of quinine-derived oligomers 6013
Rowland S. see Belt S. T. 4755
Roy R. see Cao S. 3421
Roy R. see Meunier S. J. 5469
Roy R. see Paul S. 4055
Roy S. see Chowdhury S. 2623
Roy S. see Elofsson M. 7645
Royer J. see Baussanne I. 1213
Rozen S. Bareket Y. and Dayan S. Direct epoxidation of unprotected olefinic carboxylic acids using HOF– CH_3CN 531
Ruan Z. Wilson P. and Mootoo D. R. Bis-pyranoside alkenes: novel templates for the synthesis of adjacently linked tetrahydrofurans 3619
Ruano M. see Castaño A. M. 6591
Rubiales G. see Palacios F. 6379
Rubin M. see Al Dulayymi J. R. 8933
Rubino R. S. see Hungate R. W. 4113
Rudi A. see Fridkovsky E. 6909
Rudkevich D. M. see Shivanyuk A. N. 9341
Ruecroft G. see Palmer C. F. 4601
Rüedi P. see Merckling F. A. 2217
Rueffer M. see Nasreen A. 8161
Ruel R. see Balaux E. 801
Ruggieri G. see Fiandanese V. 8455
Ruhland T. and Künzer H. Structurally diverse 2,6-disubstituted quinoline derivatives by solid-phase synthesis 2757
Ruhman I. see Haddad N. 3521
Ruiz J. Astruc D. and Gilbert L. $CoCl_2$ catalyzed trifluoroacetylation versus dimerization of methoxyaromatics using trifluoroacetic anhydride 4511
Ruiz M. Ojea V. and Quintela J. M. Amino acid based diastereoselective synthesis of elsaminose 5743
Ruiz M. see Ojea V. 5801
Ruppert R. see Hosseini M. W. 1405
Russell A. T. see Baldwin J. E. 3761
Russell A. T. see Farthing C. N. 5225
Russell G. A. and Li C. 8-*endo* Versus 5-*exo* cyclization of unsaturated acrylate esters upon reaction with *t*-BuHgI/KI 2557
Russell M. G. see Cavalla D. 7465
Russell R. A. see Warrener R. N. 3773
Ruth J. A. see Claffey D. J. 7929
Rutherford T. J. see Hartzoulakis B. 6911
Rutjes F. P. J. T. see Bernabé P. 3561
Ruzza P. Calderan A. and Borin G. Removal of benzhydryl-glycolamide (OBg) group with tetrabutylammonium fluoride 5191
Ryan D. E. Stereoselective synthesis of concave spacers for long-range electron transfer models 6089
Ryan K. M. see Senanayake C. H. 3271
Ryan M. D. see Hartzoulakis B. 6911
Rychlewska U. see Bordoloi M. 6791
Rychnovsky S. D. and Dahanukar V. H. Oxepanes from an unusual acetal cleavage of 6,8-dioxabicyclo[3.2.1]octanes 339
Rychnovsky S. D. see Hu Y. 8679
Rychnovsky S. D. see Powell N. A. 7901
Rydberg D. B. and Meinwald J. Synthesis of (±)-palasonin 1129
Rykowski A. and Wolińska E. Ring opening and ring closure reactions of 1,2,4-triazines with carbon nucleophiles: a novel route to functionalized 3-aminopyridazines 5795
Ryoo I.-J. see Yun B.-S. 8529
Ryu E. J. see Kim B. H. 139
Ryu E. K. see Kim K. M. 1441
Ryu I. see Tsunoi S. 6729

Saak W. see Kroke E. 3675
Saber A. see Sebti S. 3999
Saber A. see Sebti S. 6555

Sablong R. Newton C. Dierkes P. and Osborn J. A. Chiral tridentate C_2 diphosphine ligands for enantioselective catalysis 4933
Sablong R. and Osborn J. A. The asymmetric hydrogenation of imines using tridentate C_2 diphosphine complexes of iridium(I) and rhodium(I) 4937
Sabol J. S. see Waid P. P. 4091
Sada T. see Choshi T. 2593
Sadler I. H. see Gardiner J. M. 8447
Sadowski P. D. see Zhao B. P. 3093
Sageot O. Monteux D. Langlois Y. Riche C. and Chiaroni A. Preparation and use of chiral (*Z*)-enol ethers in asymmetric Bradsher cycloaddition 7019
Saha-Möller C. R. see Adam W. 6531
Sahagún H. see Caballero E. 6951
Saicic R. N. see Quiclet-Sire B. 9057
Said B. Abdelaziz S. and Albert R. One-pot synthesis of α-chloro hydroxamic acids using *gem*-dicyano epoxides 179
Saida Y. see Gröger H. 9291
Saigo K. see Liu C. 6177
Saiki T. Goto K. Tokitoh N. Goto M. and Okazaki R. Structures of bridged calix[6]arenes bearing a bromide functionality in the cavity 4039
Saima Y. see Ghosh S. 3169
Saini A. see Gupta S. C. 8913
Saito H. see Miura K. 8539
Saito H. see Miura K. 9059
Saito I. see Sugiyama H. 1805
Saito I. see Sugiyama H. 9067
Saito S. Sakai M. and Miyaura N. A synthesis of biaryls via nickel(0)-catalyzed cross-coupling reaction of chloroarenes with phenylboronic acids 2993
Saito T. Tsuda K. and Saito Y. A facile and efficient carbodiimide-mediated synthesis of dihydroquinazolines via a tandem nucleophilic addition–intramolecular hetero conjugate addition annulation strategy 209
Saito T. and Tsuda K. A novel and facile carbodiimide-mediated synthesis of 2,3-dihydro-6*H*-pyrimido[2,1-*b*]quinazolin-4(1*H*)-ones via a tandem intramolecular nucleophilic addition/intramolecular hetero conjugate addition annulation strategy 9071
Saito Y. see Saito T. 209
Saitoh M. Fujisaki S. Ishii Y. and Nishiguchi T. Convenient selective monoesterification of α,ω-dicarboxylic acids catalyzed by ion-exchange resins 6733
Saitoh M. see Matsunaga K. 1455
Saka Y. see Miyaoka H. 7107
Sakagami Y. see Fujii K. 389
Sakaguchi K. see Gao W. 7071
Sakaguchi K. see Kawasaki T. 7525
Sakaguchi K. see Shimano K. 2253
Sakaguchi S. see Ishii Y. 4993
Sakaguchi S. see Shiraishi H. 7291
Sakai K. see Takahashi Y. 5547
Sakai K. see Uyehara T. 7295
Sakai M. see Saito S. 2993
Sakaihara T. see Kadota I. 3195
Sakakibara S. see Nishiuchi Y. 7529
Sakamaki T. see Ishikawa T. 4393
Sakami S. see Houkawa T. 1045
Sakamoto H. see Kawagishi H. 7399
Sakamoto M. see Kawasaki T. 7525
Sakemi S. see Kawagishi H. 7399
Sakoguchi A. see Ueoka R. 3461
Saksena A. K. Girijavallabhan V. M. Wang H. Liu Y.-T. Pike R. E. and Ganguly A. K. Corrigendum 6821
Saksena A. K. Girijavallabhan V. M. Wang H. Liu Y.-T. Pike R. E. and Ganguly A. K. Concise asymmetric routes to 2,2,4-trisubstituted tetrahydrofurans via chiral titanium imide enolates: key intermediates towards synthesis of highly active azole antifungals Sch 51048 and Sch 56592 5657
Saksena A. K. see Jao E. 5661
Sakuda S. Zhou Z.-Y. Takao H. and Yamada Y. Mechanism of the cyclopentane ring formation of allosamizoline, an aminocyclitol derivative of the chitinase inhibitor allosamidin 5711
Sakurai M. Wirsching P. and Janda K. D. Design and synthesis of a cocaine–diamide hapten for vaccine development 5479
Sakurai O. and Horikawa H. A new synthetic method of 1β-methylcarbapenems utilizing the ketene dithioacetal-terminated cyclization 7811
Sakurai T. see Kubo K. 5917
Saladino R. Bernini R. Mincione E. Tagliatesta P. and Boschi T. Dimethyldioxirane-Mn(Cl16)TDMPPCl porphyrin as efficient and chemoselective epoxidizing reagent of uracil derivatives 2647
Salakhutdinov N. F. see Volcho K. P. 6181
Salaün J. see Estieu K. 623
Salazar I. C. see West C. A. 9135
Salazar J. A. see Dorta R. L. 6021
Salek A. see Ranasinghe M. G. 4797
Salemi-Delvaux C. Luccioni-Houzé B. Baillet G. Giusti G. and Guglielmetti R. Photooxygenation of α,α'-dimethylstilbenes sensitised by photochromic compounds 5127
Saljoughian M. Morimoto H. Than C. and Williams P. G. Tritium labelled alkenes via the Shapiro reaction 2923
Sallas F. Kovács J. Pintér I. Jicsinszky L. and Marsura A. One step synthesis of new urea-linked β-cyclodextrin dimers 4011
Sallé L. see Cossy J. 6709
Sallé M. see Leriche P. 8861
Salmain M. see Blanalt S. 6561
Salmon L. see Bonnette C. 1221
Salmon L. see Gaudemer A. 2237
Salmón M. see Méndez J. M. 4099
Salom B. see Gude M. 8589
Salomon C. E. and Faulkner D. J. Sagitol, a pyridoacridine alkaloid from the sponge *Oceanapia sagittaria* 9147
Salvador J. A. R. Sá e Melo M. L. and Campos Neves A. S. Oxidations with potassium permanganate–metal sulphates and nitrates. β-Selective epoxidation of Δ^5-unsaturated steroids 687
Salvador L. A. see Elofsson M. 7645
Salvadori P. see Minutolo F. 3375
Samajdar S. see Ghosh S. 2073
Samal S. K. see Gupta A. K. 2817
Sambri L. see Bartoli G. 2293
Sambri L. see Bartoli G. 7421

Sammakia T. Hurley T. B. Sammond D. M. Smith R. S. Sobolov S. B. and Oeschger T. R. Dihydroxylation and oxidative cleavage of olefins in the presence of sulfur 4427
Sammakia T. see Sammond D. M. 6065
Sammond D. M. and Sammakia T. A mild synthesis of substituted furans from γ-hydroxy-α,β-unsaturated ketones 6065
Sammond D. M. see Sammakia T. 4427
Samoshin V. V. Chertkov V. A. Vatlina L. P. Dobretsova E. K. Simonov N. A. Kastorsky L. P. Gremyachinsky D. E. and Schneider H.-J. *trans*-1,2-Cyclohexanedicarboxylic acid derivatives as pH-trigger for conformationally controlled crowns 3981
Sampe R. see Sodeoka M. 8775
Samuel C. J. see Baxter S. J. 4617
Sanchez A. M. see West C. A. 9135
Sánchez L. see de Lucas A. I. 9391
Sánchez L. see Martín N. 5979
Sanchez M. see Rivière F. 6717
Sánchez-Baeza F. see Ferrer M. 3585
Sánchez Peña M. Zhang Y. Thibodeaux S. McLaughlin M. L. Muñoz de Peña A. and Warner I. M. Synthesis of a water-soluble chiral *N*-acylcalix(4)arene amino acid derivative 5841
Sanchez-Vindas P. see Chauret D. C. 7875
Sanders J. K. M. see Rowan S. J. 6013
Sanderson P. E. J. see Cutrona K. J. 5045
Sandhu J. S. see Baruah B. 9087
Sandhu J. S. see Baruah M. 4559
Sandhu J. S. see Bhuyan P. J. 1853
Sandhu J. S. see Boruah A. 4203
Sandoe E. J. Stephenson G. R. and Swanson S. Switching regiocontrol in 1-aryl-substituted cyclohexadienyliron complexes in a formal total synthesis of lycoramine 6283
Sankuratri N. and Janzen E. G. Synthesis and spin trapping chemistry of a novel bicyclic nitrone: 1,3,3-trimethyl-6-azabicyclo[3.2.1]oct-6-ene-*N*-oxide (Trazon) 5313
Sano H. Mashio H. Nakayama T. and Kosugi M. The generation of α-trimethylsiloxy-*o*-quinodimethanes induced by one-electron reduction to *o*-acylbenzyltributylstannanes 8891
Sano S. see Nagao Y. 861
Sano T. and Kaya K. Oscillatorin, a chymotrypsin inhibitor from toxic *Oscillatoria agardhii* 6873
Sano T. see Kaya K. 6725
Sansano J. M. see Casaschi A. 4413
Sansom P. I. see Gale P. A. 7881
Santelli M. see Pellissier H. 5107
Santorelli G. M. see Waddell S. T. 1971
Sanz G. see Carreño M. C. 4081
San Feliciano A. see Medarde M. 2663
San Roman L. see Chauret D. C. 7875
Saraçoglu N. see Balcı M. 921
Sardina F. J. see Paleo M. R. 3403
Sardina F. J. see Paz M. M. 9259
Sardone N. see Gandolfi R. 917
Sargent B. J. see Ramsden C. A. 1901
Sargent M. V. see Giles R. G. F. 7851
Sarkar S. and Ghosh S. A short synthesis of (±)-methylenolactocin 4809
Sarkar T. K. Ghorai B. K. Das S. K. Gangopadhyay P. and Subba Rao P. S. V. Corrigendum 8627
Sarkar T. K. Ghorai B. K. Das S. K. Gangopadhyay P. and Rao P. S. V. S. Silicon as a controlling element for regioselective ene reaction of diethyl azodicarboxylate with (homo)allylic silanes. Applications to the synthesis of cyclic 1,2-dinitrogen compounds 6607
Sarkar T. K. and Nandy S. K. Diiodosamarium, a unique catalyst precursor for ene reactions of unsaturated carbonyl compounds 5195
Sarker S. see Robins M. J. 3921
Sarobe M. Jenneskens L. W. and Wiersum U. E. Thermolysis of benzo[*c*]phenanthrene: conversion of an alternant $C_{18}H_{12}$ PAH into non-alternant $C_{18}H_{10}$ PAHs 1121
Sarshar S. Siev D. and Mjalli A. M. M. Imidazole libraries on solid support 835
Sarshar S. see Mjalli A. M. M. 2943
Sarson L. D. see Hunter C. A. 699
Sasabe H. see Zhang Y. 5909
Sasai H. Emori E. Arai T. and Shibasaki M. Catalytic asymmetric Michael reactions promoted by the La–Na–BINOL complex (LSB). Enantioface selection on Michael donors 5561
Sasai H. see Gröger H. 9291
Sasai H. see Iseki K. 9081
Sasai H. see Kim W.-S. 7797
Sasaki H. see Tanaka Y. 881
Sasaki K. see Kubo K. 5917
Sasaki M. see Matsumori N. 1269
Sasaki R. see Oriyama T. 8543
Sasaki S. Takagi M. Tanaka Y. and Maeda M. A new application of a peptide library to identify selective interaction between small peptides in an attempt to develop recognition molecules toward protein surfaces 85
Sasaki S. see Iyoda M. 7987
Sasatani T. see Adachi M. 8871
Sashida Y. see Mimaki Y. 1245
Sasidharan M. see Barhate N. B. 2067
Sasson Y. see Feldberg L. 2063
Satake A. see Shimizu I. 7115
Satake M. Terasawa K. Kadowaki Y. and Yasumoto T. Relative configuration of yessotoxin and isolation of two new analogs from toxic scallops 5955
Satake M. see Matsumori N. 1269
Satake M. see Takahashi H. 7087
Sathe V. T. see Kalkote U. R. 6785
Sathyanarayana S. see Amat M. 3071
Sato D. see Yamashita T. 8195
Sato F. see Gao Y. 7787
Sato F. see Kasatkin A. 1849
Sato F. see Kasatkin A. 6960
Sato F. see Okamoto S. 8865
Sato F. see Urabe H. 1253
Sato F. see Yamashita K. 7275
Sato H. see Okamoto S. 8865
Sato I. Akahori Y. Iida K. and Hirama M. Efficient synthesis of a carbocyclic core moiety with the stereochemistry of the C-1027 chromophore 5135

Sato K. Yamamoto Y. and Hori H.
Convenient synthesis of both epimeric α-hydroxyaldehydes from α-hydroxydichloromethyl derivative 2799
Sato K. see Ishikawa T. 4393
Sato K. see Nakamura H. 7267
Sato K. see Suzuki K. 5921
Sato K. see Yano M. 9207
Sato M. Aoyagi S. Yago S. and Kibayashi C.
Lewis acid-promoted asymmetric conjugate allylation of *N*-acyl-2,3-dihydro-4-pyridones induced by intramolecular π interactions 9063
Sato M. Uehara F. Aizawa K. Kaneko C. Satoh S. and Furuya T.
Chiral 6,7-dihydrooxepin-2(5*H*)-ones and the azepinone analogues: conformation and diastereofacial selectivity in addition to the enones 633
Sato N.
Synthesis and properties of new luminescent 10-carboxymethylacridinium derivatives 8519
Sato S. Nakada M. and Shibasaki M.
The first chemical synthesis of wortmannin by starting from hydrocortisone 6141
Sato T. see Uyehara T. 7295
Sato Y. Takimoto M. and Mori M.
Remarkable regio-controlled effect of 1,3-diene as a ligand on nickel-promoted cyclization 887
Satoh N. see Tanaka T. 7809
Satoh S. see Sato M. 633
Satyanarayana J. Basaveswara Rao M. V. Ila H. and Junjappa H.
Synthesis and Lewis acid assisted rearrangement of novel donor– acceptor substituted cyclopropanes: highly stereoselective [4 + 1] annulation approach to substituted and spiro cyclopentene derivatives 3565
Sauer J. see Riebel P. 1583
Sauer J. see Riebel P. 1587
Sauers R. R.
An *ab initio* study of some heterocyclic 6π-carbenes 149
Sauers R. R.
π4*s* + π2*s* Cycloadditions: allyl anions plus ethylene 7679
Saunier J.-B. see Quiclet-Sire B. 1397
Sauriol F. see Zamir L. O. 6435
Sauvage J.-P. see Chodorowski-Kimmes S. 2963
Savage S. see Palmer C. F. 4601
Savelon L. see Viaud M.-C. 2409
Savic V. see Grigg R. 6565
Savignac M. see Lemaire-Audoire S. 2003
Savignac M. see Montalbetti C. 2225
Savignac P. see Dizière R. 1783
Savignac P. see Gautier I. 7721
Savin K. A. see Keck G. E. 3291
Sawada T. Shirai R. and Iwasaki S.
Facile asymmetric synthesis of the D-*myo*-inositol derivative from diethyl 2,3-*O*-isopropylidene-D-tartrate 885
Sawada T. see Mataka S. 65
Sawick D. P. see Ku Y.-Y. 1949
Sawyer J. S. see Smith, III W. J. 299
Saya S. see Kadota I. 2109
Sá e Melo M. L. see Salvador J. A. R. 687
Scaiano J. C. see Connolly T. J. 4919
Scaiano J. C. see Pérez-Prieto J. 4923
Scettri A. see Bonadies F. 1899
Scettri A. see Bonadies F. 7129
Scettri A. see Palombi L. 7849
Scettri A. see Soriente A. 8007
Schaeffer P. see Hosseini M. W. 1405
Schardt S. and Hafner K.
Synthesis of 1,3,5,7-tetra-*tert*-butyl-4,8-diphospha-*s*-indacene 3829
Scharf H.-D. see Wöhrle I. 7001
Schaus S. E. and Jacobsen E. N.
Dynamic kinetic resolution of epichlorohydrin via enantioselective catalytic ring opening with $TMSN_3$. Practical synthesis of aryl oxazolidinone antibacterial agents 7937
Scheffer J. R. see Borecka B. 2121
Scheffer J. R. see Fu T. Y. 2125
Scheffer J. R. see Gamlin J. N. 6037
Schelcher C. G. see Piettre S. R. 4711
Scherer A. see Bertram G. 7955
Scheuer P. J. see Nakao Y. 8993
Scheuer P. J. see Riccio R. 1979
Schiavon O. see Bonora G. M. 4761
Schierle K. Hopke J. Niedt M.-L. Boland W. and Steckhan E.
Homologues of dihydro-12-oxo-phytodienoic acid and jasmonic acid by mixed Kolbe electrolysis 8715
Schinazi R. F. see Xiang Y. 3779
Schlama T. Gouverneur V. and Mioskowski C.
A new and efficient preparation of carbodiimides from ureas using dimethylphosgeniminium chloride as a dehydrating agent 7047
Schlessinger R. H. and Bergstrom C. P.
Diastereoselective Diels–Alder reactions of nonracemic 3- and 4-amino furans bound to polystyrene. A comparison of these reactions to their solution state analogues 2133
Schlessinger R. H. and Gillman K. W.
An enantioselective solution towards synthesizing "skip" 1,3 dimethyl stereocenters. A synthesis of 4*S*(2*E*,4*R**,6*R**)-4,6-dimethyl-2-octenoic acid 1331
Schleyer M. see Fridkovsky E. 6909
Schlosser M. see Desponds O. 47
Schlosser M. see El-Khoury M. 9047
Schlosser M. see Mongin F. 2767
Schlosser M. see Mongin F. 6551
Schlosser M. see Wei H. 2771
Schmalz H.-G. Siegel S. and Schwarz A.
Radical cyclization of η^6-arene–$Cr(CO)_3$ complexes: a regio- and stereoselective entry to functionalized pseudopterosin precursors 2947
Schmalz H.-G. see Semmelhack M. F. 3089
Schmatz D. M. see Singh S. B. 8077
Schmid R. see Cereghetti M. 5343
Schmid U. and Waldmann H.
Activation of glycosyl phosphates by *in situ* conversion to glycosyl iodides under neutral conditions in concentrated solutions of lithium perchlorate in organic solvents 3837
Schmidt E. W. and Faulkner D. J.
Palauolol, a new anti-inflammatory sesterterpene from the sponge *Fascaplysinopsis* sp. from Palau 3951
Schmidt E. W. and Faulkner D. J.
Absolute configuration of

methyl (2*Z*,6*R*,8*R*,9*E*)-3,6-epoxy-4,6,8-triethyl-2,4,9-dodecatrienoate from the sponge *Plakortis halichondrioides* 6681
Schmidt R. R. see Eisele T. 1389
Schmidt R. R. see Espinosa J.-F. 1467
Schmidt R. R. see Rademann J. 3989
Schmitt G. see Knerr L. 5123
Schmitt H. W. see Diederichsen U. 475
Schmitt M. see Moutou J.-L. 1787
Schmittberger T. and Uguen D. A convenient synthesis of the side-chain of sterols 29
Schmittberger T. see Houille O. 625
Schmittel M. Kiau S. Siebert T. and Strittmatter M. Steric effects in enyne–allene thermolyses: switch from the Myers–Saito reaction to the C^2–C^6-cyclization and DNA strand cleavage 7691
Schmittel M. Strittmatter M. Vollmann K. and Kiau S. Intramolecular formal Diels–Alder reaction in enyne allenes. A new synthetic route to benzofluorenes and indeno[1,2-*g*]quinolines 999
Schmitz W. D. and Romo D. A new route to 2-substituted Δ^2-thiazolines: Stille cross-couplings of 2-bromo-Δ^2-thiazolines 4857
Schmuck C. see Breslow R. 8241
Schnapp K. A. Motz P. L. Stoeckel S. M. Wilson R. M. Krause Bauer J. A. and Bohne C. Sequential multiple-photon photochemistry of sterically congested enones 2317
Schneider F. see Lucet-Levannier K. 2007
Schneider H.-J. see Samoshin V. V. 3981
Schneider M.-R. Mann A. and Taddei M. Ring opening of phenylaziridines with allylsilanes 8493
Schneider R. Hosseini M. W. and Planeix J.-M. An approach to electronic communication through transannular hydrogen bond: synthesis of cyclic diamines bearing donor and acceptor groups 4721
Schofield C. J. see Baldwin J. E. 3761
Schofield C. J. see Farthing C. N. 5225
Schönholzer P. see Cereghetti M. 5343
Schouten A. see Sliedregt K. M. 4237
Schreier J. A. see Xiao D. 1523
Schröer J. see Buhr S. 1195
Schuchardt U. Mandelli D. and Shul'pin G. B. Methyltrioxorhenium catalyzed oxidation of saturated and aromatic hydrocarbons by H_2O_2 in air 6487
Schueller C. M. Manning D. D. and Kiessling L. L. Preparation of (*R*)-(+)-7-oxabicyclo[2.2.1]hept-5-ene-*exo*-2-carboxylic acid, a precursor to substrates for the ring opening metathesis polymerization 8853
Schultz A. G. and Li Y.-J. Birch reduction and reduction–alkylations of 3,4-dihydro-3-methyl-8-phenylisocoumarin 6511
Schultz A. G. and Taveras A. G. Synthesis and photochemistry of spiro[2.5]octa-1,4-dien-3-ones. Reversible biradical formation and biradical-olefin cycloaddition 5853
Schultz P. G. see Kim J.-M. 5305
Schultz P. G. see Kim J.-M. 5309
Schultz P. G. see Paikoff S. J. 5653
Schulz K. see Hofmann J. 2399
Schulze M. M. and Gockel U. Selective isomerization of electron deficient vinylcyclopropanes by thermal action of pentacarbonyl iron 357
Schulze S. see Waldmann H. 8725
Schumacher D. P. see Gala D. 611
Schunk S. see Ciufolini M. A. 2881
Schürer S. C. see Virgilio A. A. 6961
Schwabacher A. W. and Stefanescu A. D. Improved preparation of phosphinate esters for palladium-catalyzed cross-coupling 425
Schwaebe M. K. and Little R. D. Organometallic nucleophilic ring-opening of *endo* peroxides 6635
Schwan A. L. Kalin M. L. Vajda K. E. Xiang T.-J. and Brillon D. Oxidative fragmentations of selected 1-alkenyl sulfoxides. Chemical and spectroscopic evidence for 1-alkenesulfinyl chlorides 2345
Schwartz J. see Spencer R. P. 4357
Schwartz W. S. see Kant J. 6495
Schwarz A. see Schmalz H.-G. 2947
Schwing-Weill M.-J. see Fanni S. 7975
Schwink L. and Knochel P. A new practical asymmetric synthesis of C_2-symmetrical 1,1'-ferrocenyl diols via CBS-reduction 25
Schwink L. see Püntener K. 8165
Scialdone M. A. Diisocyanates as scaffolds for combinatorial libraries. The solid-phase synthesis of bis-ureas from polymer-supported diisocyanates 8141
Scicinski J. J. see Chan C. 8925
Sclafani J. A. Maranto M. T. Sisk T. M. and Van Arman S. A. An aqueous ratiometric fluorescence probe for Zn(II) 2193
Scolastico C. see Bernardi A. 8921
Scott A. I. see Pichon C. 2891
Scott A. I. see Wang J. 3247
Scripilliti A. see Ercolani G. 101
Sebastian J. F. see Power T. D. 9127
Sebesta D. P. see McGee D. P. C. 1995
Sebti S. Rhihil A. Saber A. Laghrissi M. and Boulaajaj S. Synthèse des α-hydroxyphosphonates sur des supports phosphatés en absence de solvant 3999
Sebti S. Rhihil A. Saber A. and Hanafi N. Catalyse hétérogène de l'hydratation des nitriles en amides par le phosphate naturel dopé par KF et le phosphate trisodique 6555
Sedin Z. see Riego J. M. 513
Seeberger P. H. see Greef C. H. 4451
Seelbach K. Riebel B. Hummel W. Kula M.-R. Tishkov V. I. Egorov A. M. Wandrey C. and Kragl U. A novel, efficient regenerating method of NADPH using a new formate dehydrogenase 1377
Seferin M. see Monteiro A. L. 1157
Segawa H. see Susumu K. 8399
Segura J. L. Martín N. Seoane C. and Hanack M. Synthesis and electrochemistry of a soluble double-bridged tetrathiafulvalene

(TTF)-*p*-benzoquinone from novel unsymmetrical TTFs 2503
Seifert J. and Unverzagt C. Synthesis of a core-fucosylated, biantennary octasaccharide as a precursor for glycopeptides of complex *N*-glycans 6527
Seifert W. E. see Wang G. 6515
Sekar G. DattaGupta A. and Singh V. K. $Cu(OTf)_2$–DBN/DBU complex as an efficient catalyst for allylic oxidation of olefins with *tert*-butyl perbenzoate 8435
Seki H. see Seto H. 4179
Seki K. see Kadota I. 3059
Seki M. Yamanaka T. Miyake T. and Ohmizu H. A facile synthesis of the key intermediate for penems, carbapenems, and related β-lactam antibiotics 5565
Seki M. and Matsumoto K. A novel approach to homochiral β-amino acids 3165
Seki M. see Miyake T. 3129
Seki M. see Yamanaka T. 4967
Sekiguchi H. see Kawasaki T. 7525
Sekine M. see Kawahara S. 509
Sekine M. see Tsuruoka H. 6741
Sekine T. Kawashima E. and Ishido Y. Efficient synthesis of D-[5-^{13}C]ribose from D-ribose and its conversion into [5'-^{13}C]nucleosides 7757
Sekine T. see Sugiyama H. 1805
Sella A. Basch H. and Hoz S. Strain release is not enough 5573
Selnick H. G. see Butcher J. W. 6685
Sels B. F. De Vos D. E. and Jacobs P. A. Selective epoxidations involving anionic peroxotungsten compounds generated *in situ* on layered double hydroxides with various polarities 8557
Semmelhack M. F. and Schmalz H.-G. Asymmetric induction in the nucleophile addition to η^6-arene-tricarbonyl–chromium(0) complexes 3089
Semones M. A. see Padwa A. 335
Semple J. E. see Tamura S. Y. 4109
Sen A. and Krishnan V. Synthesis, spectral and electrochemical properties of donor/acceptor substituted fluoroarylporphyrins 5421
Sen A. and Krishnan V. Novel β-pyrrole substituted porphyrin–quinone system for efficient intramolecular charge transfer 8437
Senanayake C. H. Smith G. B. Ryan K. M. Fredenburgh L. E. Liu J. Roberts F. E. Hughes D. L. Larsen R. D. Verhoeven T. R. and Reider P. J. The role of 4-(3-phenylpropyl)-pyridine *N*-oxide (P_3NO) in the manganese– salen-catalyzed asymmetric epoxidation of indene 3271
Senanayake C. H. see Davies I. W. 1725
Senanayake C. H. see Davies I. W. 813
Seneci P. Sizemore C. Islam K. and Kocis P. Combinatorial chemistry and natural products. Teicoplanin aglycone as a molecular scaffold for solid phase synthesis of combinatorial libraries 6319
Seng D. see Metz P. 3841
Senge M. O. see Kalisch W. W. 1183
Sengupta S. Das D. and Sen Sarma D. $RuCl_2(PPh_3)_3$: a new catalyst for diazocarbonyl insertions into heteroatom–hydrogen bonds 8815
Sengupta S. see Mehta G. 8625
Senn M. see Tronche C. 5845
Sen Sarma D. see Sengupta S. 8815
Seo J. see Montgomery J. 6839
Seo Y. see Oh C. H. 8875
Seoane C. see de Lucas A. I. 9391
Seoane C. see Martín N. 5979
Seoane C. see Segura J. L. 2503
Séraphin D. see Noé E. 5701
Séraphin D. see Noé E. 8823
Sesenoglu Ö. see Demir A. S. 407
Sessler J. L. Dávila R. M. and Král V. Polypyrroles in three dimensions. The synthesis of tripyrrane-strapped 2-aminophenylporphyrins 6469
Sessler J. L. see Gale P. A. 7881
Seto H. Watanabe H. and Furihata K. Simultaneous operation of the mevalonate and non-mevalonate pathways in the biosynthesis of isopentenyl diphosphate in *Streptomyces aeriouvifer* 7979
Seto H. Yoshida K. Yoshida S. Shimizu T. Seki H. and Hoshino M. Oxidation of ethers to esters by photo-irradiation with benzil and oxygen 4179
Seto H. see Furihata K. 8901
Seto H. see Hayakawa Y. 6363
Seto H. see Yun B.-S. 8529
Seto N. see Hamada Y. 7565
Sewald N. see Osipov S. N. 615
Seybold P. G. see Xiao D. 1523
Sha C.-K. Yang J.-F. and Chang C.-J. Transfer of the R^1C-N(*t*Boc)-CR^2 unit from 2,4-dihydropyrrolo[3,4-*b*]indoles to dienophiles by Diels–Alder and retro-Diels–Alder reactions 3487
Sha C.-K. Yang J.-F. and Chang C.-Y. Corrigendum 6959
Shachter A. M. see Flores V. 8633
Shal'ko A. A. see Polovinka M. P. 2631
Shamblin B. M. see Tamura S. Y. 4109
Shang L. see Donaldson W. A. 423
Shankar B. B. Kirkup M. P. McCombie S. W. Clader J. W. and Ganguly A. K. Synthesis of an optically pure 3-unsubstituted β-lactam using an asymmetric Reformatsky reaction and its conversion to cholesterol absorption inhibitors 4095
Shanthan Rao P. see Chandra Sheker Reddy A. 2845
Shao Y. see Lõwik D. W. P. M. 8253
Shapiro M. J. Kumaravel G. Petter R. C. and Beveridge R. ^{19}F NMR monitoring of a S_NAr reaction on solid support 4671
Shapiro T. A. see Posner G. H. 7225
Shapiro T. A. see Posner G. H. 815
Sharadendu A. see Neeland E. G. 5069
Sharma A. K. see Chavan S. P. 5027
Sharma A. K. see Chavan S. P. 2857
Sharma M. L. and Chand T. Synthesis of (±)-2-methyl-(2'-hydroxy-4'-methylphenyl)-2-hepten-4-one (Turmeronol B) 2279
Sharma S. see Gupta S. C. 8913
Sharma S. K. Wu A. D. and Chandramouli N. Maleimide-assisted on-resin macrocyclization 5665

Sharman W. M. Kudrevich S. V. and van Lier J. E. Novel water-soluble phthalocyanines substituted with phosphonate moieties on the benzo rings 5831
Sharp H. J. see Griffiths R. C. 3207
Sharpless K. B. see Chang H.-T. 3219
Shaw-Ponter S. Mills G. Robertson M. Bostwick R. D. Hardy G. W. and Young R. J. Acyl carbamate directing groups in nucleoside synthesis: applications in the synthesis of 2'-deoxy-5-ethyl-4'-thiouridine 1867
Shaw-Ponter S. Rider P. and Young R. J. New synthesis of both D- and L-3-*O*-carbamoyl-2-deoxy-4-thioribosides, substrates for β-selective glycosylations 1871
Shawe T. T. Landino L. M. Ross A. A. Prokopowicz A. S. Robinson P. M. and Cannon A. New chemistry of cyclic, *s-trans*-enaminones: addition of Grignard reagents to enaminones derived from 2-methylcyclohexane-1,3-dione 3823
Shcherbukhin V. V. see Polovinka M. P. 2631
Shea K. J. see Gwaltney, II S. L. 949
Sheik M. see Zhou D. 2385
Sheldrake P. W. see Sisko J. 8113
Shepherd J. A. Poon W. W. Myles D. C. and Clarke C. F. The biosynthesis of ubiquinone: synthesis and enzymatic modification of biosynthetic precursors 2395
Sherburn M. S. see Mander L. N. 4255
Shevlin P. B. see Li Z. 4651
Shevlin P. B. see Thamattoor D. M. 8333
Shi G. and Huang X. 2-(Acetoxymethyl)-1,1-difluoro-3-(trimethylsilyl)-propene: preparation and utility as a novel bifunctional reagent containing a CF_2 group 5401
Shi H. see Girard C. 63
Shi X.-X. Khanapure S. P. and Rokach J. Deblocking of dithioacetals and oxathioacetals using periodic acid under mild nonaqueous conditions 4331
Shi Y.-J. see Wells K. M. 6439
Shi Z. Goulle V. and Thummel R. P. An aza-analogue of TTF: 1,1';3,3'-bistrimethylene-2,2'-diimidazolinylidine 2357
Shia K.-S. see Liu H.-J. 8073
Shiba T. see Inami K. 2043
Shibasaki M. see Dai J.-P. 491
Shibasaki M. see Gröger H. 9291
Shibasaki M. see Iseki K. 9081
Shibasaki M. see Kim W.-S. 7797
Shibasaki M. see Sasai H. 5561
Shibasaki M. see Sato S. 6141
Shibasaki M. see Tokunoh R. 2449
Shibata I. see Yasuda M. 5951
Shibata K. Shingu K. Vassilev V. P. Nishide K. Fujita T. Node M. Kajimoto T. and Wong C.-H. Kinetic and thermodynamic control of L-threonine aldolase catalyzed reaction and its application to the synthesis of mycestericin D 2791
Shibata K. see Katsuyama I. 4177
Shibata T. Morioka H. Tanji S. Hayase T. Kodaka Y. and Soai K. Enantioselective synthesis of chiral 5-carbamoyl-3-pyridyl alcohols by asymmetric autocatalytic reaction 8783
Shibata T. see Mutou T. 7299
Shibata T. see Suenaga K. 6771
Shibazaki T. see Iimori T. 2267
Shibuya M. Wakayama M. Naoe Y. Kawakami T. Ishigaki K. Nemoto H. Shimizu H. and Nagao Y. Cycloaromatization of enediyne model compounds via a reaction cascade triggered by hydrolysis of the α-alkynylmalonates 865
Shibuya M. see Wakayama M. 5397
Shiga Y. see Uenishi J. 6759
Shigematsu K. see Fukushi Y. 4737
Shigemoto T. see Miyaoka H. 7407
Shigeta Y. see Nishide K. 2271
Shikano M. see Chou T. 3871
Shilvock J. P. Wheatley J. R. Davis B. Nash R. J. Griffiths R. C. Jones M. G. Müller M. Crook S. Watkin D. J. Smith C. Besra G. S. Brennan P. J. and Fleet G. W. J. Inhibition of naringinase (L-rhamnosidase) by piperidine analogues of L-rhamnose: scaffolds for libraries incorporating trihydroxy-pipecolic acids 8569
Shima H. Kobayashi R. Nabeshima T. and Furukawa N. Activation and facile dealkylation of monooxides of 2,2'-bis(alkylthio)-biphenyl with triflic anhydride via dithiadications: a new method for preparation of thiasulfonium salts 667
Shimada A. see Kawagishi H. 7399
Shimano K. Ge Y. Sakaguchi K. and Isoe S. Synthesis of both enantiomers of halitunal 2253
Shimano M. Nagaoka H. and Yamada Y. Stereoselective total synthesis of (±)-antheridic acid 7553
Shimanouchi T. see Kotsuki H. 1845
Shimasaki C. see Morita H. 3739
Shimidzu T. see Fukui K. 4983
Shimidzu T. see Susumu K. 8399
Shimizu H. see Araki S. 8417
Shimizu H. see Nagao Y. 861
Shimizu H. see Shibuya M. 865
Shimizu I. Matsumoto Y. Shoji K. Ono T. Satake A. and Yamamoto A. Enantioselective elimination reaction of a 6,6-membered bicyclic allylic carbonate. Importance of chirality reversal depending on the palladium–chiral phosphine ratio 7115
Shimizu I. see Nagasawa K. 6881
Shimizu I. see Nagasawa K. 6885
Shimizu M. Takebe Y. Kuroboshi M. and Hiyama T. Diastereoselective generation of lithium carbenoid reagent RCH(OMEM)CFBrLi and its reaction with electrophiles 7387
Shimizu M. see Fujisawa T. 3881
Shimizu M. see Hayakawa R. 7533
Shimizu M. see Iwasaki Y. 6753
Shimizu R. Yoneda E. and Fuchikami T. Copper catalyzed Grignard cross-coupling reaction with β-perfluoroalkyl-substituted alkyl halides 5557
Shimizu R. and Fuchikami T. Palladium catalyzed coupling reactions of β-perfluoroalkyl-substituted alkyl halides with organostannanes 8405
Shimizu T. Hiranuma S. and Nakata T. Efficient method for inversion of secondary alcohols by reaction of chloromethanesulfonates with cesium acetate 6145
Shimizu T. Kobayashi R. Osako K. Osada H. and

Nakata T.
Synthetic studies on reveromycin A: stereoselective synthesis of the spiroketal system 6755
Shimizu T. see Seto H. 4179
Shimomoto N. see Kotsuki H. 3727
Shin K. see Heo P.-Y. 1521
Shin K. see Heo P.-Y. 197
Shin S. C. see Cho S.-D. 7059
Shin S. R. see Park K. H. 8869
Shinada T. Miyachi M. Itagaki Y. Naoki H. Yoshihara K. and Nakajima T.
Facile synthesis of 6-hydroxyindole-3-acetic acid: on the structure of the aromatic subunit of nephilatoxin-1~6 7099
Shindo M. see Sugasawa K. 7377
Shindo M. see Yasuda K. 6343
Shine H. J. see Zhao W. 1749
Shing T. K. M. Chow H.-F. and Chung I. H. F.
Sugarometallic chemistry: aglycone–chromium complex as chiral auxiliary in asymmetric Diels–Alder reaction 3713
Shingu K. see Shibata K. 2791
Shinkai S. see Araki K. 73
Shinkai S. see Hamachi I. 9233
Shinkai S. see Ikeda A. 1621
Shinkai S. see Ikeda A. 7091
Shinkai S. see Lhoták P. 645
Shinkai S. see Matsumoto H. 77
Shinoda S. and Osuka A.
Transesterification of the α-keto ester in methyl pheophorbide-*a* 4945
Shinohara H. see Tso T. S. C. 9249
Shinohara N. see Yoshifuji M. 7815
Shinokubo H. see Inoue R. 5377
Shinokubo H. see Takaku K. 6781
Shioiri T. see Deng J. 2261
Shioiri T. see Takaoka K. 4973
Shioiri T. see Takaoka K. 4977
Shioji K. see Yasui S. 1625
Shiojima K. see Arai Y. 4381
Shiomi D. see Yano M. 9207
Shiomi K. Uchida R. Inokoshi J. Tanaka H. Iwai Y. and Omura S.
Andrastins A–C, new protein farnesyltransferase inhibitors, produced by *Penicillium* sp. FO-3929 1265
Shiozaki M. Deguchi N. Mochizuki T. and Nishijima M.
Stereocontrolled synthesis of all stereoisomers of the proposed flavolipin 3875
Shiozaki M. Mochizuki T. Wakabayashi T. Kurakata S. Tatsuta T. and Nishijima M.
Synthesis of 2,6-anhydro-3-deoxy-5-*O*-phosphono-3-tetradecanamido-4-*O*-[(*R*)-3-(tetradecanoyloxy)tetradecanoyl]-D-*glycero*-D-*ido*-heptonic acid as a new potent endotoxin antagonist and its dimeric analogue 7271
Shiozaki M. Mochizuki T. Wakabayashi T. Kurakata S. Tatsuta T. and Nishijima M.
Corrigendum 8627
Shirahama H. see Hashimoto K. 2275
Shirahama H. see Ujihara K. 2039
Shirai M. see Gao Y. 7787
Shirai R. see Onoda T. 4397
Shirai R. see Sawada T. 885
Shiraishi H. Kawasaki Y. Sakaguchi S. Nishiyama Y. and Ishii Y.
Aldol type condensation of imines catalyzed by samarium complexes 7291
Shirakata N. see Tsunoda T. 2463
Shirakawa Y. see Ohno M. 9211
Shiraki M. see Nemoto H. 6355
Shiro M. see Nagao Y. 861
Shirodai Y. see Abe M. 5901
Shirokawa T. see Okuma K. 8883
Shiromoto M. see Itoh T. 5001
Shishido K. see Irie O. 9229
Shishkin O. see Hughes A. D. 7607
Shishkin O. V. see Mascal M. 131
Shivanyuk A. N. Rudkevich D. M. and Reinhoudt D. N.
Assembly of bifunctional receptors via the melamine–barbiturate structural motif 9341
Shiyama T. see Suda Y. 1053
Shohda K. see Tsuruoka H. 6741
Shoji K. see Shimizu I. 7115
Shokova E. A. Khomich A. N. and Kovalev V. V.
Selective adamantylation of *p*-H-calix[4]arene in trifluoroacetic acid 543
Shono T. see Kashimura S. 6737
Short K. M. Ching B. W. and Mjalli A. M. M.
The synthesis of hydantoin 4-imides on solid support 7489
Short K. M. see Zhang C. 751
Shpiro N. A. see Borodkin V. S. 1489
Shrader W. D. and Imperiali B.
Synthesis of the glucoallosamidin pseudo-disaccharide: use of an efficient Hg(II) mediated cyclization 599
Shu C.-F. Tsai W.-J. and Jen A. K.-Y.
A new synthetic approach for nonlinear optical chromophores possessing enhanced thermal stability 7055
Shu T. Chen D.-W. and Ochiai M.
Direct synthesis of 2-substituted furotropones from tropolones utilizing alkynyl(phenyl)iodonium salts 5539
Shudo K. see Azumaya I. 5003
Shudo K. see Ohwada T. 2609
Shue Y.-K.
Total synthesis of (±) indolmycin 6447
Shuhaibar K. F. see Heaney H. 4275
Shull B. K. see Wu J. 3647
Shul'pin G. B. see Schuchardt U. 6487
Shultz D. A. and Zhao Q.
Preparation and characterization of a bis-galvinoxyl-disulfide 8837
Shustov G. see Polyak F. 8223
Shuto S. Haramuishi K. and Matsuda A.
Nucleosides and nucleotides—CXLV. Synthesis of 2'-deoxy and 5'-phosphate derivatives of bredinin. A photochemical imidazole-ring cleavage and subsequent reconstruction of the base moiety 187
Shuto S. Ono S. Hase Y. Kamiyama N. and Matsuda A.
Synthesis of (+)- and (–)-milnaciprans and their conformationally restricted analogs 641
Shuto S. see Ono S. 221
Shuttleworth S. J. see Allin S. M. 8023
Sibley G. E. M. see Taylor G. M. 1297
Sica D. see Graziano M. L. 527
Siciliano C. see Leggio A. 1277
Sieber-McMaster E. see Robl J. A. 8985
Siebert T. see Schmittel M. 7691
Sieburth S. McN. and Lin C.-H.
Intermolecularly selective [4 + 4] photocycloaddition of 2-pyridone mixtures 1141
Siegel M. G. see Kaldor S. W. 7193
Siegel S. see Schmalz H.-G. 2947
Siegmund A. C. see Beaver K. A. 1145
Sierra C. see Garcia J. J. 6097
Sierra M. A. see Alcaide B. 6901
Siev D. see Sarshar S. 835

Sigafoos J. see Spaltenstein A. 1343
Silva A. M. S. see Faustino M. A. F. 3569
Silva R. A. see Gribble G. W. 2145
Silveira C. C. Braga A. L. Machado A. Fiorin G. L. and Dabdoub M. J. Reaction of α-chloro-α-phenylselenoesters with silyl enol ethers. Synthesis of α-phenylseleno-γ-keto esters and γ-butyrolactones 9173
Silveira C. C. Fiorin G. L. and Braga A. L. Lewis acid-catalyzed coupling reactions of allylsilanes with tris(phenylchalcogeno)methane. Synthesis of homoallylchalcogenoacetals 6085
Silverberg L. J. Dillon J. L. and Vemishetti P. A simple, rapid and efficient protocol for the selective phosphorylation of phenols with dibenzyl phosphite 771
Silverton J. V. see Ionescu D. 1559
Silvestre A. J. D. see Cavaleiro J. A. S. 1893
Sim K.-Y. see Loh T.-P. 2989
Sim K.-Y. see Venkatraman G. 2643
Sim T. B. Choi J. and Yoon N. M. A new coupling reaction of alkyl iodides with α,β-unsaturated esters using Ni_2B(cat.)-BER in methanol 3137
Simakov P. A. see Newcomb M. 819
Simmons C. J. Colmenares L. U. and Liu R. S. H. X-Ray crystal structure of a hindered 7-*cis* isomer of vitamin A. 7-*cis*-8-Fluororetinal 4103
Simoni D. see Kozikowski A. P. 5333
Simonneaux G. see Morice C. 6701
Simonneaux G. see Poignant G. 7511
Simonov N. A. see Samoshin V. V. 3981
Simpkins N. S. see Hughes A. D. 7607
Simpson T. J. see McNicholas C. 8053
Sin N. and Kallmerten J. Synthesis of (2*S*,3*S*,8*S*,9*S*)-Adda from D-glucose 5645
Sindelar C. A. see Flores V. 8633
Sindona G. see Leggio A. 1277
Singaram B. see Cai J. 3383
Singh H. see Kumar S. 2071
Singh H. see Kumar S. 3495
Singh M. see Murray R. W. 8671
Singh P. see Kumar S. 3495
Singh P. R. Rajopadhye M. Clark S. L. and Williams N. E. Effect of scavengers in acidolytic cleavage of Cys(Acm)-containing peptides from solid support: isolation of an ethanedithiol disulfide adduct 4117
Singh S. B. Zink D. L. Polishook J. D. Dombrowski A. W. Darkin-Rattray S. J. Schmatz D. M. and Goetz M. A. Apicidins: novel cyclic tetrapeptides as coccidiostats and antimalarial agents from *Fusarium pallidoroseum* 8077
Singh S. K. Parmar V. S. and Wengel J. Towards 2',3'-dideoxy-nucleoside libraries: synthesis of 3'-alkylthio analogues from an α,β-unsaturated aldehyde 7619
Singh V. K. see DattaGupta A. 2633
Singh V. K. see Sekar G. 8435
Sinha N. D. see Kremsky J. N. 4313
Sinha Roy R. and Imperiali B. Stereoselective synthesis of a pyridoxamine coenzyme–amino acid chimera: assembly of a polypeptide incorporating the pyridoxamine moiety 2129
Sinibaldi M.-E. see Ibrahim-Ouali M. 37
Sinou D. see Nguefack J.-F. 5527
Sinou D. see Nguefack J.-F. 59
Sirlin C. see Chengebroyen J. 7263
Sisk T. M. see Sclafani J. A. 2193
Sisko J. Mellinger M. Sheldrake P. W. and Baine N. H. An efficient method for the synthesis of substituted TosMIC precursors 8113
Sisti N. J. see Fortunak J. M. D. 5679
Sisti N. J. see Fortunak J. M. D. 5683
Sitaramaiah D. see Venkateswara Rao B. 8613
Sivanandaiah K. M. Suresh Babu V. V. and Gangadhar B. P. Silicon tetrachloride and phenol as N^{α}-*t*-butoxycarbonyl group deprotecting agent in solid-phase peptide synthesis 5989
Sizemore C. see Seneci P. 6319
Sjöberg S. see Tjarks W. 6905
Skalitzky D. J. see Hu Y. 8679
Skattebøl L. see Hofsløkken N. 119
Skelton B. W. see Bremner J. B. 8573
Sklenár V. see Marek R. 1655
Skoda-Földes R. Jeges G. Kollár L. Horváth J. and Tuba Z. Facile, high-yielding synthesis of novel pentacyclic steroids 2085
Slany M. Caminade A.-M. and Majoral J. P. Specific functionalization on the surface of dendrimers 9053
Slate R. A. see Herrick R. S. 5289
Slaven, IV W. T. see Li C.-J. 4459
Slavík J. see Marek R. 1655
Slawin A. M. Z. see Heaney H. 4275
Sliedregt K. M. Schouten A. Kroon J. and Liskamp R. M. J. Reaction of *N*-trityl amino acids with BOP: efficient synthesis of *t*-butyl esters as well as *N*-trityl serine- and threonine-β-lactones 4237
Smelt K. H. see Blériot Y. 7155
Smirnov I. P. see Polushin N. N. 3227
Smirnov I. P. see Timofeev E. N. 8467
Smith B. D. see Morin G. T. 3101
Smith B. D. see Riggs J. A. 6303
Smith B. D. see Staley S. A. 283
Smith C. see Davis B. 8565
Smith C. see Shilvock J. P. 8569
Smith D. B. Elworthy T. R. Morgans, Jr D. J. Nelson J. T. Patterson J. W. Vasquez A. and Waltos A. M. Investigation of an unusual rearrangement 21
Smith G. B. see Senanayake C. H. 3271
Smith G. R. see Butcher J. W. 6685
Smith J. A. see Ang K. H. 675
Smith J. A. S. see Gerothanassis I. P. 3191
Smith K. M. see Gerlach B. 5431
Smith K. M. see Kozyrev A. N. 6431
Smith K. M. see Kozyrev A. N. 747
Smith K. M. see Nguyen L. T. 7177
Smith P. W. see Howes P. D. 6595
Smith R. J. see Bremner J. B. 8573
Smith R. J. see Bremner J. B. 97
Smith R. S. see Sammakia T. 4427

Smith S. C. see Fleming I. 9395
Smith T. J. see Prévot-Halter I. 1201
Smith, III A. B. Kinsho T. Sunazuka T. and Omura S. Biomimetic total synthesis of the ACAT inhibitor (+)-pyripyropene E 6461
Smith, III A. B. see Hirschmann R. 5637
Smith, III W. J. and Sawyer J. S. A novel and selective method for the N-arylation of indoles mediated by KF/Al_2O_3 299
Smits R. see Butler D. N. 2157
Smrcková S. see Baldwin J. E. 6919
Smyth D. G. see Attwood M. R. 2731
Snaith J. S. see Jones R. C. F. 1707
Snaith J. S. see Jones R. C. F. 1711
Snelgrove D. W. MacFaul P. A. Ingold K. U. and Wayner D. D. M. The role of alkoxyl radicals in Gif ($GoAgg^V$) chemistry 823
Snider B. B. Chen J. Patil A. D. and Freyer A. J. Synthesis of the tricyclic portions of batzelladines A, B and D. Revision of the stereochemistry of batzelladines A and D 6977
Snieckus V. see Brough P. A. 2915
Snieckus V. see Superchi S. 6057
Snieckus V. see Superchi S. 6061
Snoonian J. R. see Wiberg K. B. 8285
Snyder J. K. see Benson S. C. 5061
Soai K. see Shibata T. 8783
Sobel M. see Suda Y. 1053
Sobkowski M. see Cieslak J. 4561
Sobolov S. B. see Sammakia T. 4427
Sodano G. see Izzo I. 4775
Sodano G. see Soriente A. 8007
Sodeoka M. see Dai J.-P. 491
Sodeoka M. see Tokunoh R. 2449
Sodeoka M. Sampe R. Kagamizono T. and Osada H. Asymmetric synthesis of RK-682 and its analogs, and evaluation of their protein phosphatase inhibitory activities 8775
Södergren M. J. and Andersson P. G. Chiral, bicyclic proline derivatives and their application as ligands for copper in the catalytic asymmetric allylic oxidation of olefins 7577
Soderquist J. A. Vaquer J. Diaz M. J. Rane A. M. Bordwell F. G. and Zhang S. Triisopropylsilanol: a new type of phase transfer catalyst for dehydrohalogenation 2561
Sofia M. J. see Chan T. Y. 8097
Solà L. see Camps P. 8601
Sola R. Méry J. and Pascal R. Fmoc-based solid-phase peptide synthesis using Dpr(Phoc) linker. Synthesis of a *C*-terminal proline peptide 9195
Šolaja B. A. Milic D. R. and Gašic M. J. A novel *m*-CPBA oxidation: *p*-quinols and epoxyquinols from phenols 3765
Solans X. see Camps P. 8601
Solans X. see Farràs J. 901
Solé D. Bonjoch J. García-Rubio S. Suriol R. and Bosch J. A new solution for the construction of the piperidine ring of *Strychnos* alkaloids from 3a-(*o*-nitrophenyl)hexahydroindol-4-ones. Total syntheses of (±)-tubifolidine, (±)-dihydroakuammicine, and (±)-akuammicine 5213
Soliman H. see Elmorsy S. S. 2297
Solladié G. and Chu G.-H. Total synthesis of (+)-indolizidine 195 B and (+)-monomorine 111
Soloshonok V. A. Kacharov A. D. Avilov D. V. and Hayashi T. Transition metal-catalyzed diastereoselective aldol reactions of prochiral ketones with methyl isocyanoacetate 7845
Soloshonok V. A. see Hayashi T. 4969
Soloway A. H. see Cai J. 9283
Somfai P. see Åhman J. 2495
Somsák L. see Kovács G. 1293
Son D. Y. Bucca D. and Keller T. M. Hydrosilylation reactions of bis(dimethylsilyl)acetylenes: a potential route to novel σ- and π-conjugated polymers 1579
Sone T. see Ito K. 5959
Song Q. see Ozola V. 8621
Song Y. see Burke S. D. 343
Sonoda N. see Terao J. 4741
Sonoda N. see Tsunoi S. 6729
Sood G. H. N. see Luis J. G. 4213
Soriente A. De Rosa M. Scettri A. and Sodano G. A new approach to pyranofuranones, advanced intermediates for the synthesis of manoalide, cacospongionolides and their analogues 8007
Sotheeswaran S. see Spino C. 6503
Soto J. J. see Rodríguez A. D. 2687
Sotomayor N. see Collado M. I. 6193
Sotomayor N. see Manteca I. 7841
Sotomayor N. see Superchi S. 6057
Sotomayor N. see Superchi S. 6061
Souchard J.-P. see Urizzi P. 4685
Soufiaoui M. see Beugelmans R. 1603
Souizi A. see Boukhris S. 4693
Soumillion J. Ph. see Ayadim M. 7039
Soumillion J. Ph. see Ayadim M. 381
Soundararajan R. see Dhokte U. P. 8345
South M. S. Jakuboski T. L. Westmeyer M. D. and Dukesherer D. R. Novel cyclization reactions of dichloroazodienes 1351
South M. S. see Hamper B. C. 3671
Souto M. L. see Norte M. 2671
Sowa, Jr J. R. see Liu C. 7241
Sowell C. G. Livesay M. T. and Johnson D. A. New procedure for the preparation of 2-(trimethylsilyl)ethyl 2-acetamido-2-deoxy-3,4,6-tri-*O*-acetyl-β-D-glucopyranoside and other alkyl β-glycosides 609
Spaltenstein A. Leban J. J. Huang J. J. Reinhardt K. R. Viveros O. H. Sigafoos J. and Crouch R. Design and synthesis of novel protease inhibitors. Tripeptide α',β'-epoxyketones as nanomolar inactivators of the proteasome 1343
Spaltenstein A. see Miller J. F. 2521
Spangle L. A. see Dressman B. A. 937
Spangler L. A. A novel method for the preparation of 2,6-disubstituted benzenesulfonates and benzenesulfonyl chlorides utilizing the powerful alkyl sulfonate *ortho* directing group 3639
Sparey T. J. see Clark A. J. 909
Spatola A. F. Darlak K. and Romanovskis P. An approach to cyclic peptide libraries: reducing epimerization in medium sized rings during solid phase synthesis 591
Spear K. L. see Beaver K. A. 1145

Speckamp W. N. see Bernabé P. 3561
Speckamp W. N. see Luker T. 8257
Spencer R. P. and Schwartz J. Variously substituted glycals are readily prepared from glycosyl bromides using $(Cp_2TiCl)_2$ 4357
Speranza G. Manitto P. Fontana G. Monti D. and Galli A. Evidence for enantiomorphic–enantiotopic group discrimination in diol dehydratase-catalyzed dehydration of *meso*-2,3-butanediol 4247
Sperry S. and Crews P. A novel alkaloid from the Indo-Pacific sponge *Clathria basilana* 2389
Spiegel S. see Kozikowski A. P. 3279
Spilling C. D. see Boehlow T. R. 2717
Spinelli E. M. see Busacca C. A. 2935
Spino C. Mayes N. Desfossés H. and Sotheeswaran S. Enantioselective synthesis of (+)- and (–)-dihydrokawain 6503
Spitzner D. see Braun N. A. 9187
Spivey A. C. see Baldwin J. E. 3761
Spivey A. C. see Farthing C. N. 5225
Sponsler M. B. see Gu X. 1571
Sprengeler P. A. see Hirschmann R. 5637
Spunta G. see Bandini E. 4409
Spyroudis S. see Papoutsis I. 913
Spyvee M. see Frost C. 9139
Spyvee M. R. see Baldwin J. E. 6923
Srebnik M. see Deloux L. 2735
Srebnik M. see Pereira S. 3283
Sreekumar R. and Padmakumar R. Aromatic 3-aza-Cope rearrangement over zeolites 5281
Sridharan V. see Grigg R. 3399
Sridharan V. see Grigg R. 4221
Srikantha A. R. P. see Chan C. 8925
Srikrishna A. Kumar P. P. and Viswajanani R. A simple strategy for spirocyclopentannulation of cyclic ketones. Formal total synthesis of (±)-acorone 1683
Srikrishna A. Reddy T. J. and Nagaraju S. Enantioselective synthesis of both (+)- and (–)-derivatives of bicyclo[4.3.0]-nonan-8-one and -3,8-diones from *R*-carvone 1679
Srikrishna A. and Viswajanani R. Stereospecific construction of stereogenic vicinal quaternary carbon atoms. Enantiospecific synthesis of (+)-valerane 2863
Srinivasan P. C. see Mohanakrishnan A. K. 2659
Srivastava S. and Falvey D. E. Photolysis of 3-hydroxy-2,3-dihydro-2,1-benzisoxazole derivatives studied by EPR spectroscopy: competing N–O and C–O bond scission 2895
Srogl J. see Kocovsky P. 5585
Stabile M. R. see Butora G. 8155
Stahr H. see Gleiter R. 1179
Staley S. A. and Smith B. D. Phenyl glycopyranoside recognition in water using Stoddart's cyclobis-(paraquat-*p*-phenylene) receptor 283
Stalmans W. see Blériot Y. 7155
Stamos D. P. Taylor A. G. and Kishi Y. A mild preparation of vinyliodides from vinylsilanes 8647
Stamos D. P. and Kishi Y. Synthetic studies on halichondrins: a practical synthesis of the C.1–C.13 segment 8643
Stanbury T. V. see Michael J. P. 9403
Standen M. C. H. see Bell L. 7139
Stang P. J. see Lermontov S. A. 4051
Stansfield K. see Crowley P. J. 5975
Stansfield K. see Crowley P. J. 8233
Stansfield K. see Crowley P. J. 8237
Starbuck K. E. see Hungate R. W. 4113
Starkey I. D. see Murray P. J. 1875
Staszak M. A. see Huff B. E. 3655
Staunton J. see Less S. L. 3511
Staunton J. see Less S. L. 3515
Staunton J. see Less S. L. 3519
Stavber S. and Zupan M. High yield direct fluorofunctionalisation of ketones using Accufluor™-NFTh fluorinating reagent 3591
Stawinski J. see Bollmark M. 3537
Stawinski J. see Bollmark M. 5739
Stawinski J. see Cieslak J. 4561
Steckhan E. see Schierle K. 8715
Steel P. G. see Batsanov A. S. 2491
Steel P. G. see Byerley A. L. J. 9093
Steenkamp J. A. see Marais C. 5763
Steenken S. see Kirmse W. 1197
Stefanescu A. D. see Schwabacher A. W. 425
Steglich W. see Bertram G. 7955
Steglich W. see Mayer G. 4483
Stein B. K. see Plater M. J. 7855
Steinberg T. H. see Gee K. R. 7905
Steinman M. see Gala D. 611
Steinwascher J. see Griesbeck A. G. 8367
Steimach J. E. see Winkler J. D. 4317
Stemp G. see Harm A. M. 6189
Stenland C. J. see Braslau R. 7933
Stepanenko W. see Michalak K. 7657
Stepanian M. see Paquette L. A. 1721
Stepanian M. W. see McGarvey G. J. 5461
Stepanian M. W. see McGarvey G. J. 5465
Stephanidou-Stephanatou J. see Nicolaides D. N. 1097
Stephenson G. R. see Attwood M. R. 2731
Stephenson G. R. see Hudson R. D. A. 9009
Stephenson G. R. see Sandoe E. J. 6283
Stepsus N. A. see Van Arnum S. D. 8659
Stetsenko D. A. Lubyako E. N. Potapov V. K. Azhikina T. L. and Sverdlov E. D. New approach to solid phase synthesis of polyamide nucleic acids analogues (PNA) and PNA–DNA conjugates 3571
Stevenson P. J. see McAlonan H. 7151
Stevenson T. M. Bhanu Prasad A. S. Rao Citineni J. and Knochel P. Preparation of zinc organometallics derived from nucleosides and nucleic acid bases and Pd(0) catalyzed coupling with aryl iodides 8375
Stewart A. O. see Williams D. R. 983
Stick R. V. see McAuliffe J. C. 2479
Still W. C. see Pan Z. 8699
Stille J. R. Ward J. A. Leffelman C. and Sullivan K. A. 5-Formyl salicylaldehyde as a

linker for the synthesis of benzofuran containing insulin sensitivity enhancer compounds 9267
Stock H. T. and Turner N. J. Crystallisation-induced dynamic resolution of dipeptide-derived 5(4*H*)-oxazolones 6575
Stockman R. see Andrews I. P. 4811
Stoddart J. F. see Ashton P. R. 6217
Stoeckel S. M. see Schnapp K. A. 2317
Stoelwinder J. see Kozikowski A. P. 5333
Stojanovic A. and Renaud P. N,Se-Acetals: easy preparation and application to radical mediated EPC synthesis 9199
Stojanovic A. see Renaud P. 2569
Stokker G. E. Preparation of 1,2,3,4-tetrahydroisoquinolines lacking electron donating groups—an intramolecular cyclization complementary to the Pictet– Spengler reaction 5453
Stoltz B. M. and Wood J. L. The stereoselective ring contraction of a pyranosylated indolocarbazole. A biosynthetic link between K252a and staurosporine? 3929
Stoltz B. M. see Wood J. L. 7335
Stone B. A. see McAuliffe J. C. 2479
Stones J. A. see Craig D. 535
Storace L. see Zhang L. 4455
Storch de Gracia I. see Carretero J. C. 3379
Storey B. M. see Atkinson R. N. 9287
Stoub D. G. Cheng K.-L. and Goodman J. L. The stereospecific cyclopropanation of diarylcarbene cation radicals 4927
Stowell M. H. B. Rock R. S. Rees D. C. and Chan S. I. Efficient synthesis of photolabile alkoxy benzoin protecting groups 307
Strack T. J. see Reetz M. T. 9293
Stratakis M. Orfanopoulos M. Chen J. S. and Foote C. S. Reaction profile of the photooxygenation of trisubstituted alkenes 4105
Stratakis M. Orfanopoulos M. and Foote C. S. Solvent effects in the stereoselectivity of the ene reaction of singlet oxygen with allylic alcohols 7159
Strehlke P. see Bohlmann R. 7249
Strekowski L. Lin S.-Y. Lee H. and Mason J. C. Base-mediated reactions of *ortho*- and *para*-perfluoroalkylanilines 4655
Strelenko Y. A. see Churakov A. M. 8577
Strittmatter M. see Schmittel M. 7691
Strittmatter M. see Schmittel M. 999
Strocker A. M. Keating T. A. Tempest P. A. and Armstrong R. W. Use of a convertible isocyanide for generation of Ugi reaction derivatives on solid support: synthesis of α-acylaminoesters and pyrroles 1149
Strömberg R. see van der Laan A. C. 7857
Studley J. R. see Gamble M. P. 2853
Stuhlemmer U. and Kreis W. Does the malonyl-coenzyme A:21-hydroxypregnane 21-hydroxymalonyltransferase catalyze the first step in the formation of the butenolide ring of cardenolides? 2221
Suárez E. see Dorta R. L. 6021
Suárez E. see Francisco C. G. 1687
Suárez E. see Hernández R. 6409
Suárez-Gea M. L. García-López M. T. González-Muñiz R. Herrero S. and Herranz R. Branched peptides and conformationally constrained analogues from cyanomethyleneamino pseudopeptides 2083
Suau R. Nájera F. and Rico R. Photochemical hydroxymethylation of protoberberine alkaloids. Total synthesis of (±)-solidaline 3575
Suau R. López-Romero J. M. and Rico R. A versatile approach to the synthesis of 4,5-dioxoaporphine and 3,4-dioxocularine alkaloids. One-pot sequential C/B ring formation from arylacetamides 9357
Subasinghe N. L. see Khalil E. M. 3441
Subba Rao P. S. V. see Sarkar T. K. 8627
Subbaraju G. V. see Banik B. K. 1363
Subba Rao G. S. R. see Kaliappan K. 8429
Subramanian V. see Myers A. G. 587
Subramanyam C. Corrigendum 2315
Subramanyam C. Chattarjee S. and Mallamo J. P. A convenient synthesis of 3-substituted pipecolic acid methyl esters 459
Subramanyam C. Chatterjee S. and Mallamo J. P. Corrigendum 2315
Suda Y. Bird K. Shiyama T. Koshida S. Marques D. Fukase K. Sobel M. and Kusumoto S. Synthesis and biological activity of a model disaccharide containing a key unit in heparin for binding to platelets 1053
Suda Y. see Fukase K. 6763
Sudalai A. see Barhate N. B. 2067
Sudalai A. see Ponde D. 4605
Sudalai A. see Ramchandani R. K. 4063
Sudhakar A. R. see Andrews D. R. 3417
Sueda T. see Ochiai M. 8421
Suenaga K. Kigoshi H. and Yamada K. Auripyrones A and B, cytotoxic polypropionates from the sea hare *Dolabella auricularia*: isolation and structures 5151
Suenaga K. Mutou T. Shibata T. Itoh T. Kigoshi H. and Yamada K. Isolation and stereostructure of aurilide, a novel cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia* 6771
Suffert J. see Ziessel R. 2011
Sufi B. A. see Amat M. 5217
Sufi B. A. see Bennasar M.-L. 7653
Sufi B. A. see Bennasar M.-L. 9105
Sugahara T. and Ogasawara K. Contra-steric Diels–Alder route to 3-oxodicyclopentadiene and *meso* 3,5-*endo*-dihydroxy-4,5-dihydrodicyclopentadiene 205
Sugahara T. and Ogasawara K. Enantioconvergent synthesis of (+)-estrone from racemic 4-*tert*-butoxy-2-cyclopentenone 7403
Suganuma H. see Matsumoto M. 5939
Sugasawa K. Shindo M. Noguchi H. and Koga K. Solution structures of a monodentate chiral lithium amide in the presence of lithium halide 7377

Sugata T. and Higuchi R. A facile preparation of the methyl 2-thioglycoside of *N*-glycolylneuraminic acid, an efficient donor of NeuGc 2613
Sugathapala P. see Rigby J. H. 5293
Sugawa Y. see Yasuda M. 5951
Sugawara M. see Yoshida J. 3157
Sugimura H. see Sujino K. 6133
Sugimura T. Futagawa T. Katagiri T. Nishiyama N. and Tai A. Enantiospecific preparation of *gem*-dimethylcyclopropane fused cycloheptanes via valence tautomerization of 3,4-homotropilidene under thermodynamic and kinetic control 7303
Sugino E. see Choshi T. 2593
Suginome M. Matsunaga S. Iwanami T. Matsumoto A. and Ito Y. Palladium-catalyzed intramolecular addition of trisilanes to carbon–carbon double bonds. Polyol synthesis by use of a disilanyl group as a hydroxyl equivalent 8887
Sugiura M. and Nakai T. Regiochemical control in the Pd(II)-catalyzed Claisen rearrangement via *in situ* enol ether exchange 7991
Sugiura Y. see Takahashi T. 2433
Sugiura Y. see Yamamoto Y. 7801
Sugiyama H. Fujimoto K. Saito I. Kawashima E. Sekine T. and Ishido Y. Evidence for intrastrand C2' hydrogen abstraction in photoirradiation of 5-halouracil-containing oligonucleotides by using stereospecifically C2'-deuterated deoxyadenosine 1805
Sugiyama H. Matsuda S. Kino K. Zhang Q.-M. Yonei S. and Saito I. New synthetic method of 5-formyluracil-containing oligonucleotides and their melting behavior 9067
Suh J.-M. see Ha H.-J. 7069
Suhara Y. Hildreth J. E. K. and Ichikawa Y. Corrigendum 4827
Suhara Y. Hildreth J. E. K. and Ichikawa Y. Synthesis of a new carbohydrate mimetics: "carbopeptoid" containing a C-1 carboxylate and C-2 amino group 1575
Suhara Y. Ichikawa M. Hildreth J. E. K. and Ichikawa Y. Synthesis of sulfated β-1,6-linked oligosaccharide mimetics: a novel potent inhibitor of HIV replication 2549
Suich D. J. Ballinger M. D. Wells J. A. and DeGrado W. F. Fmoc-based synthesis of glycolate ester peptides for the assembly of *de novo* designed multimeric proteins using subtiligase 6653
Sujino K. Yoshida T. and Sugimura H. Facile synthesis of 2',3'-unsaturated nucleosides from 2-deoxyribose 6133
Sukanya S. see Ramadas K. 7665
Sukhomlinova L. I. see Bumagin N. A. 897
Sulikowski G. A. see Lim H.-J. 5243
Süling C. see Zhang D. 3799
Sullivan K. A. see Stille J. R. 9267
Sullivan P. J. see Krein D. M. 7213
Sulsky R. see Robl J. A. 8985
Sultana F. see Iyoda M. 7987
Sumida S. see Tanaka H. 5967
Sumithra G. see Chandrasekhar S. 1645
Sumithra G. see Yadav J. S. 6603
Sun D. see Liu H.-J. 8073
Sun D.-J. see Chou S.-S. P. 7279
Sun H. see Yue X. 8213
Sun L. Li P. Landry D. W. and Zhao K. Synthesis of *N*-alkoxytrihydroxypiperidine analogs of allopyranose 1547
Sun S. see Hong B. 659
Sun W.-C. see Gee K. R. 7905
Sunazuka T. see Smith, III A. B. 6461
Sung J. W. Jang W. B. and Oh D. Y. First example of 1,1-bimetalloalkenes of tellurium and zirconium: application for stereoselective preparation of (*Z*)-α-organotelluro-α,β-unsaturated carbonyl compounds 7537
Superchi S. Sotomayor N. Miao G. Joseph B. Campbell M. G. and Snieckus V. α-Aryl *O*-vinyl carbamates. Tandem carbolithiation–α-alkylation and –[1,2]-Wittig rearrangement reactions 6061
Superchi S. Sotomayor N. Miao G. Joseph B. and Snieckus V. α-Zinc *O*-vinyl carbamates as anionic Friedel–Crafts equivalents. Cross coupling reactions with aryl and heteroaryl halides and triflates 6057
Suresh Babu V. V. see Sivanandaiah K. M. 5989
Suri S. C. Corrigendum 7665
Suri S. C. Flexible approach for stereoselective synthesis of functionalized *cis*-hydrindanes: potential building blocks for natural product synthesis 2335
Suriol R. see Solé D. 5213
Surivet J.-P. Goré J. and Vatèle J.-M. Total synthesis of (+)-goniodiol 371
Surivet J.-P. and Vatèle J.-M. Concise total synthesis of (+)-goniofufurone and goniobutenolides A and B 4373
Suryawanshi S. N. see Paul S. 4055
Suryawanshi S. N. see Rani A. 8037
Susumu K. Shimidzu T. Tanaka K. and Segawa H. Synthesis of novel porphyrin arrays directly-linked through the *meso*-carbons 8399
Sutherland J. D. see Cook S. D. 5779
Suto M. J. see Gayo L. M. 4915
Suzaki T. see Ramesh U. 8403
Suzuki H. and Abe H. A new straightforward synthesis of alkynyl sulfones via the sonochemical coupling between alkynyl halides and copper sulfinates 3717
Suzuki H. see Tanaka K. 5925
Suzuki H. see Yamazaki N. 6161
Suzuki I. see Yamamoto Y. 1863
Suzuki K. Fujii T. Sato K. and Hashimoto H. Two efficient routes for construction of amidine-linked pseudo-disaccharide 5921
Suzuki K. see Hosoya T. 663
Suzuki M. see Harada K. 3001
Suzuki M. see Kai S. 5931
Suzuki S. see Kobayashi S. 2809
Suzuki S. see Kobayashi S. 7783
Suzuki T. see Araki K. 73
Svensson A. Fex T. and Kihlberg J. Use of ^{19}F NMR spectroscopy to evaluate reactions in solid phase organic synthesis 7649
Sverdlov E. D. see Stetsenko D. A. 3571
Swanson S. see Sandoe E. J. 6283

Swartz, Jr S. G. see Hernandez S. 4907
Sweeney J. B. see Knight J. 6579
Swenton L. see Khanna I. K. 1355
Swindell C. S. and Fan W. Corrigendum 3919
Swindell C. S. and Fan W. Construction of an advanced taxane synthesis intermediate with an oxygenated B-ring and a non-aromatic C-ring through intramolecular pinacol coupling at C-1–C-2 2321
Swinnen D. see Kreiser W. 7119
Swinnen D. see Krief A. 7123
Sylvestre M. see Chiodi O. 39
Systermans A. Dat Y. and Ripoll J.-L. The flash vacuum thermolysis of 1,3-diisopropyl- and 1,3-ditertiobutyl-2,2,4,4-tetramethylcyclodisilazanes 3317
Szardenings A. K. Gordeev M. F. and Patel D. V. A general and convenient synthesis of novel phosphotyrosine mimetics 3635
Szczepanski S. W. and Anouna K. G. Synthesis of semi-rigid analogs of anabasine 8841
Szczepek W. J. see Kasal A. 6221
Sztaricskai F. J. see Kovács-Kulyassa A. 2499
Szymoniak J. Felix D. and Moïse C. Transition metal promoted synthesis of *N,N*-dimethyl tertiary amides from 1,3-dienes 33

Tabakovic I. and Tabakovic K. One pot electrochemical synthesis of 10,10'-bisvindoline by an oxidation–reduction sequence 3659
Tabakovic K. see Tabakovic I. 3659
Tabohashi K. see Takahashi Y. 5547
Taborda G. see Paredes R. 1965
Tachibana J. see Ueki M. 4953
Tachibana K. see Matsumori N. 1269
Tada Y. see Miki Y. 7753
Taddei M. see Mann A. 2651
Taddei M. see Schneider M.-R. 8493
Taga T. see Fuji K. 7111
Tagat J. R. McCombie S. W. and Puar M. S. A scalemic synthesis of the scopadulcic acid skeleton—I. An efficient γ-alkylation at C-9 in abietane framework and subsequent aldol reaction 8459
Tagat J. R. Puar M. S. and McCombie S. W. A scalemic synthesis of the scopadulcic acid skeleton—II. Ring-D formation via regiospecific intramolecular aldol and alkylation reactions 8463
Tagawa Y. Tanaka J. Hama K. Goto Y. and Hamana M. A novel reaction of benzoyl chloride adduct of aromatic *N*-oxide with carbonitrile via a carbene intermediate 69
Taglialatela-Scafati O. see Cafieri F. 3587
Tagliatesta P. see Paolesse R. 2637
Tagliatesta P. see Saladino R. 2647
Taguchi H. see Okada Y. 2249
Taguchi T. see Kodama Y. 1061
Taguchi T. see Kodama Y. 2515
Tahara S. see Fukushi Y. 4737
Tahara T. see Fujita K. 1825
Tai A. see Sugimura T. 7303
Taillades J. see Collet H. 9043
Takabe K. see Yoda H. 5531
Takacs J. M. and Mehrman S. J. Catalytic cobalt-mediated reductive carbocyclizations 2749
Takada K. see Kobayashi K. 2437
Takada S. see Adachi M. 8871
Takagi A. see Kataoka T. 2257
Takagi H. see Mizutani T. 2581
Takagi M. see Sasaki S. 85
Takagi Y. Teramoto J. Kihara H. Itoh T. and Tsukube H. Thiacrown ether as regulator of lipase-catalyzed *trans*-esterification in organic media: practical optical resolution of allyl alcohols 4991
Takagi Y. see Itoh T. 91
Takahashi C. Numata A. Yamada T. Minoura K. Enomoto S. Konishi K. Nakai M. Matsuda C. and Nomoto K. Penostatins, novel cytotoxic metabolites from a *Penicillium* species separated from a green alga 655
Takahashi H. Kusumi T. Kan Y. Satake M. and Yasumoto T. Determination of the absolute configuration of yessotoxin, a polyether compound implicated in diarrhetic shellfish poisoning, by NMR spectroscopic method using a chiral anisotropic reagent, methoxy-(2-naphthyl)acetic acid 7087
Takahashi H. see Iimori T. 649
Takahashi K. see Kita Y. 7545
Takahashi M. see Iseki K. 5149
Takahashi M. see Kobayashi J. 1449
Takahashi M. see Kubo A. 4957
Takahashi N. see Mizuno K. 2975
Takahashi T. Tanaka H. Matsuda A. Yamada H. Matsumoto T. and Sugiura Y. Synthesis of 10-membered masked oxaenediyne analogue of kedarcidin-chr. and C-1027-chr., and its DNA cleaving activity 2433
Takahashi T. Xi Z. Kotora M. Xi C. and Nakajima K. Preparation of 1,2,3-trisubstituted cyclopentadienes and tetrahydroindene derivatives from zirconacyclopentenes 7521
Takahashi Y. Miyamoto K. Sakai K. Ikeda H. Miyashi T. Ito Y. and Tabohashi K. Electrocycloreversion of benzocyclobutenols promoted by photoinduced electron transfer 5547
Takahashi Y. Nishioka N. Endoh F. Ikeda H. and Miyashi T. Phenylcyclopropane cation radical revisited: generation, direct observation and determination of the rates of nucleophilic capture 1841
Takahashi Y. Tanino K. and Kuwajima I. Methylenecyclopentane annulation via formal [3 + 2] cycloaddition reaction 5943
Takahashi Y. see Harayama H. 7287
Takahashi Y. see Ikeda H. 4377
Takai K. Ueda T. Hayashi T. and Moriwake T. Activation of manganese metal by a catalytic amount of $PbCl_2$ and Me_3SiCl 7049
Takaki K. see Taniguchi Y. 3465
Takaku K. Shinokubo H. and Oshima K. Intramolecular iodosilyletherization of alkenylsilanols with bis(2,4,6-trimethylpyridine)iodine(I) hexafluorophosphate 6781
Takakura H. Toyoda K. and Yamamura S. The first synthesis of a 2-*epi*-cedrene isoprenologue by means of an electrochemical method in the key step 4043
Takami J. see Kohmoto S. 7761

Takampon A. see Pohmakotr M. 4585
Takanashi S. see Mori K. 1821
Takano I. Yasuda I. Nishijima M. Hitotsuyanagi Y. Takeya K. and Itokawa H. Cephalotaxidine, a novel dimeric alkaloid from *Cephalotaxus harringtonia* var. *drupacea* 7053
Takao H. see Sakuda S. 5711
Takao K. see Ito H. 1799
Takaoka K. Aoyama T. and Shioiri T. A simple one-pot preparation of 2-pyridones from acyl isocyanates utilizing trimethylsilylketene 4973
Takaoka K. Aoyama T. and Shioiri T. A convenient one-pot preparation of bicyclic 2-pyridones from acyl isocyanates utilizing trimethylsilylketene 4977
Takaoka S. see Toyota M. 4745
Takasu K. see Fuji K. 7111
Takasu K. see Kawabata T. 4153
Takata T. see Mizuno K. 7775
Takayama S. Livingston P. O. and Wong C.-H. Synthesis of the melanoma-associated ganglioside 9-*O*-acetyl GD3 through regioselective enzymatic acetylation of GD3 using subtilisin 9271
Takayama S. Moree W. J. and Wong C.-H. Enzymatic resolution of amines and amino alcohols using pent-4-enoyl derivatives 6287
Takebe Y. see Kita Y. 7369
Takebe Y. see Shimizu M. 7387
Takeda K. see Konda Y. 4015
Takeda M. see Morita H. 3739
Takeda T. see Urabe H. 1253
Takeda Y. see Kita Y. 7545
Takei H. see Houkawa T. 1045
Takei H. see Kuramochi T. 7075
Takekawa T. see Yamanaka H. 1829
Takemoto Y. Baba Y. Noguchi I. and Iwata C. Asymmetric synthesis of (diene)$Fe(CO)_3$ complexes via catalytic enantioselective alkylation with dialkylzinc 3345
Takenaka H. see Inoue M. 5731
Takenaka H. see Inoue M. 8823
Takesako K. see Inami K. 2043
Takeuchi K. Ohga Y. Tokunaga K. and Tsugeno A. Formation of a propellanone in the solvolysis of a 2-oxo bicyclic bridgehead compound 8185
Takeuchi K. see Fukuyama Y. 6767
Takeuchi K. see Okazaki T. 1035
Takeuchi K. see Tokunaga K. 2241
Takeuchi S. see Nakamura Y. 2805
Takeuchi T. see Hosoya Y. 9227
Takeya K. see Takano I. 7053
Takikawa H. see Kobayashi J. 6775
Takikawa H. see Mori K. 3741
Takimoto M. see Sato Y. 887
Takimoto N. see Komatsu K. 6153
Takui T. see Hatanaka K. 873
Takui T. see Hatanaka K. 877
Takui T. see Yano M. 9207
Takuwa A. see Nishigaichi Y. 3701
Talapatra S. see Harrison B. 9151
Talaty E. R. see Yusoff M. M. 8695
Tam J. P. see Liu C.-F. 933
Tamagnan G. Gao Y. Baldwin R. M. Zoghbi S. S. and Neumeyer J. L. Synthesis of β-CIT-BAT, a potential technetium-99m imaging ligand for dopamine transporter 4353
Tamai R. see Murashima T. 8391
Tamamura H. see Ibuka T. 2849
Tamao K. see Yamaguchi S. 2983
Tamaoka Y. see Tsunoda T. 2463
Tamariz J. see Nagarajan A. 6835
Tamaru Y. see Harayama H. 7287
Tamburini B. see Ghiron C. 3891
Tamburini B. see Kennedy G. 7441
Tamilarasu N. see Ranganathan S. 5199
Tamura N. see Murakami M. 7541
Tamura S. Y. Semple J. E. Ardecky R. J. Leon P. Carpenter S. H. Ge Y. Shamblin B. M. Weinhouse M. I. Ripka W. C. and Nutt R. F. Novel and general method for the preparation of peptidyl argininals 4109
Tan L. see Gassman P. G. 439
Tan X. see Wilson S. R. 775
Tanabe G. see Yoshimatsu M. 4161
Tanabe Y. Wakimura K. and Nishii Y. Sequential and highly stereoselective intermolecular radical additions of 2,3-*cis*-disubstituted 1,1-dibromo- and 1-bromocyclopropanes to electron-deficient olefins 1837
Tanaka A. see Konno H. 5393
Tanaka H. Sumida S. and Torii S. Synthesis of 3-alkenyl-Δ^2-cephems by copper(I) chloride-promoted alkenylation of 3-trifluoromethylsulfonyloxy-Δ^3-cephem with alkenyltributyltins 5967
Tanaka H. see Kittaka A. 2801
Tanaka H. see Shiomi K. 1265
Tanaka H. see Takahashi T. 2433
Tanaka J. and Higa T. Zampanolide, a new cytotoxic macrolide from a marine sponge 5535
Tanaka J. see Jefford C. W. 159
Tanaka J. see Tagawa Y. 69
Tanaka K. Kitahara Y. Suzuki H. Osuga H. and Kawai Y. Synthesis and crystal structure of chiral bifunctional helicenes with π-deficient pyridine and π-excessive thiophene units 5925
Tanaka K. Otsubo K. and Fuji K. Enantioselective preparation of allenecarboxylates by asymmetric Horner–Wadsworth–Emmons reaction 3735
Tanaka K. see Fuji K. 7111
Tanaka K. see Fuji K. 7373
Tanaka K. see Fukui K. 4983
Tanaka K. see Hagiwara T. 8187
Tanaka K. see Susumu K. 8399
Tanaka M. see Tsunoi S. 6729
Tanaka S. see Harayama H. 7287
Tanaka T. Patra D. Murakami K. Kanda A. Hamano K. Yamamoto S. Satoh N. and Iwata C. Pd(0)-catalyzed lactone migration: a facile route to *cis*-fused hydrobenzofurans 7809
Tanaka T. see Iida K. 4997
Tanaka T. see Kamata M. 8181
Tanaka T. see Ohyama M. 5155
Tanaka Y. Nagamoto K. Sasaki H. Fujimoto T. Nishino N. and Oka M. Four α-helix bundle structure built with alternating D- and L-segments 881
Tanaka Y. see Hatanaka M. 401
Tanaka Y. see Sasaki S. 85
Tang F. see Wee A. G. H. 6677
Tang J. Y. see Zhang Z. 331
Tang K.-H. see Tsai Y.-M. 7767

Tangney R. S. see Perry N. B. 9387
Tani K. see Kataoka Y. 7083
Tani K. see Kimura Y. 4961
Tani T. see Kadota S. 7283
Taniguchi Y. Nagata K. Kitamura T. Fujiwara Y. Deguchi D. Maruo M. Makioka Y. and Takaki K. Convenient preparation and reaction of a divalent ytterbium thiolate 3465
Tanikawa S. see Ito H. 1795
Tanino K. see Takahashi Y. 5943
Tanji S. see Shibata T. 8783
Tanner D. D. see Li X. 3275
Tanpure R. P. see Hadimani S. B. 4791
Tanyeli C. see Demir A. S. 407
Tao J. see Hoffman R. V. 2381
Tao X. see Posner G. H. 7225
Tao X. see Posner G. H. 815
Tardella P. A. see Carducci M. 3777
Tarnchompoo B. see Jaivisuthunza W. 3199
Tarrant G. J. see Bremner J. B. 8573
Tarrant G. J. see Bremner J. B. 97
Tartakovsky V. A. see Churakov A. M. 8577
Tartar A. see Bourel L. 4145
Tashiro M. see Mataka S. 65
Tasker P. A. see Ashton P. R. 6217
Tatsuta K. and Yasuda S. Total synthesis of deacetylcaloporoside, a novel inhibitor of the $GABA_A$ receptor ion channel 2453
Tatsuta T. see Shiozaki M. 7271
Tatsuta T. see Shiozaki M. 8627
Taubner L. M. see Johnson D. A. 605
Taveras A. G. see Schultz A. G. 5853
Taylor A. G. see Stamos D. P. 8647
Taylor D. K. see Barton D. H. R. 1133
Taylor G. M. Baker S. J. Gedney A. Pearson D. J. and Sibley G. E. M. On the Ritter reaction of cyclic hydroxyamines: synthesis of conformationally-restricted reduced amide dipeptide isosteres 1297
Taylor J. W. see Yu C. 1731
Taylor J. W. see Zhang W. 2173
Taylor P. C. see Clark A. J. 909
Taylor P. G. see Bassindale A. R. 555
Taylor R. see Benito A. M. 1085
Taylor R. J. K. see Alcaraz L. 6619
Taylor R. J. K. see Charoenying P. 1913
Taylor R. J. K. see Gamble M. P. 7457
Taylor R. J. K. see Graham A. E. 7445
Taylor R. J. K. see Kapfer I. 2101
Taylor R. J. K. see Wei X. 4209
Taylor S. D. Dinaut A. N. Thadani A. N. and Huang Z. Synthesis of benzylic mono(α,α-difluoromethylphosphonates) and benzylic bis(α,α-difluoromethylphosphonates) via electrophilic fluorination 8089
Taylor S. J. C. see Palmer C. F. 4601
Tchertanov L. see Mazaleyrat J.-P. 2971
Teague S. J. Facile synthesis of a *o*-nitrobenzyl photolabile linker for combinatorial chemistry 5751
Tebben A. J. see Butcher J. W. 6685
Tedrow J. S. see Evans D. A. 7481
Tehim A. see Hanessian S. 9001
Tellew J. E. see Armstrong R. W. 447
Temnikov D. V. see Fissyuk A. S. 5203
Tempest P. A. see Strocker A. M. 1149
Tepperman P. M. see Butler D. N. 2825
Terada E. see Oi S. 6351
Terada Y. see Konishi H. 8791
Teraguchi M. see Kotsuki H. 3727
Terakawa E. see Okazaki T. 1035
Teramoto J. see Takagi Y. 4991
Teranishi K. Hisamatsu M. and Yamada T. Studies on the mechanism of chemiluminescence: synthesis and chemiluminescent properties of the 5-hydroperoxide analogue of coelenterate luciferin 8425
Terao J. Kambe N. and Sonoda N. Tellurium–zinc exchange reaction. A new preparative method of alkenyl-zinc reagents 4741
Terasawa K. see Satake M. 5955
Terashima R. see Kawasaki T. 7525
Terashima S. see Katoh T. 3471
Terashima S. see Katoh T. 3479
Terashima S. see Ueki Y. 5719
Terashima S. see Yoshino T. 3475
Terme T. see Vanelle P. 3323
Terrier C. see Grigg R. 4221
Terry M. see Zhu G. 4475
Terzis A. see Nicolaides D. N. 1097
Teshima K. see Ushigoe Y. 2093
Teutsch G. see Goubet F. 7727
Thadani A. N. see Taylor S. D. 8089
Thal C. see Guillou C. 4515
Thamattoor D. M. Jones, Jr M. Pan W. and Shevlin P. B. Cyclopropylmethylcarbene 8333
Than C. see Saljoughian M. 2923
Thatcher G. R. J. see Gorin B. I. 4647
Thayumanavan S. Beak P. and Curran D. P. Asymmetric deprotonation of *N,N*-dihexyl-1-naphthamides to provide atropisomers of *N,N*-dihexyl-2-alkyl-1-naphthamides 2899
Theberge C. R. see Cebula R. E. J. 8341
Thebtaranonth C. see Jaivisuthunza W. 3199
Thebtaranonth Y. see Jaivisuthunza W. 3199
Thee K. K. see Poh B.-L. 7433
Thee K. K. see Poh B.-L. 8451
Théodore N. see Ourtoule J.-C. 4697
Thibodeaux S. see Sánchez Peña M. 5841
Thibonnet J. Abarbri M. Parrain J.-L. and Duchêne A. Tributylstannyl 4-tributylstannylbut-3-enoate: a useful C-4 homologating agent. Application to the synthesis of aryl iodolactones 7507
Thiel M. see Bojack G. 6103
Thiel M. see Künzer H. 1771
Thomas R. C. see Brough P. A. 2915
Thomas R. J. see Ghiron C. 3891
Thompson C. M. and Lin J. Synthesis of P-chiral, phosphorothioic acid analogs of *N*-phospholeucinamide 8979
Thompson S. P. see Beddoes R. L. 9119
Thorat T. S. see Yadav G. D. 5405
Thorimbert S. and Malacria M. Unusual reactivity of acetate versus carbonate in palladium-catalyzed nucleophilic substitutions: a strong silicon effect 8483
Thornton L. C. see Herrick R. S. 5289
Thum O. Chen J. and Prestwich G. D. Synthesis of a photoaffinity

analogue of phosphatidyl-inositol 3,4-bisphosphate, an effector in the phosphoinositide 3-kinase signaling pathway 9017
Thummel R. P. see Shi Z. 2357
Thuring J. W. J. F. Klunder A. J. H. Nefkens G. H. L. Wegman M. A. and Zwanenburg B. Lipase catalyzed dynamic kinetic resolution of some 5-hydroxy-2(5*H*)-furanones 4759
Thyrann T. and Lightner D. A. Oxidation of pyrrole α-methyl to methoxymethyl with ceric triflate 315
Tian S. Forgo P. and D'Souza V. T. Selective modification at the 3-position of β-cyclodextrin 8309
Tian W. see Zhu Z. 8553
Tiekink E. R. T. see Warrener R. N. 2161
Tiekink E. R. T. see Warrener R. N. 3773
Tikhonov A. Ya. see Khlestkin V. K. 5997
Tilbrook D. M. G. see Giles R. G. F. 7851
Tilley J. W. see Di Grandi M. J. 8261
Tilley J. W. see Di Grandi M. J. 4327
Timberlake J. W. see Jursic B. S. 6473
Timofeev E. N. Smirnov I. P. Haff L. A. Tishchenko E. I. Mirzabekov A. D. and Florentiev V. L. Methidium intercalator inserted into synthetic oligonucleotides 8467
Ting A. Y. see Corey E. J. 1735
Tishchenko E. I. see Timofeev E. N. 8467
Tishkov V. I. see Seelbach K. 1377
Tjarks W. Ghaneolhosseini H. Henssen C. L. A. Malmquist J. and Sjöberg S. Synthesis of *para*- and *nido*-carboranyl phenanthridinium compounds for neutron capture therapy 6905
Tjepkema M. W. see Wong T. 755
Tobe Y. Utsumi N. Kawabata K. and Naemura K. Synthesis and self-association properties of diethynylbenzene macrocycles 9325
Todd L. J. see Grieco P. A. 8707
Toepfer A. see Eisele T. 1389
Togo H. Hoshina Y. and Yokoyama M. Cyclic amination onto aromatic ring of sulfonamides with (diacetoxyiodo)-arenes: effect of sulfonyl group 6129
Togo H. see Muraki T. 2441
Toida T. see Konda Y. 4015
Töke L. see Mikló K. 3491
Tokitoh N. Ito M. and Okazaki R. Formation and reactions of a thioxoborane, a novel boron–sulfur double-bond compound 5145
Tokitoh N. see Saiki T. 4039
Tokuda H. see Iida A. 9219
Tokumasu M. see Ohta S. 7765
Tokunaga K. Ohga Y. and Takeuchi K. Solvolysis of 2-thioxo bridgehead compounds as compared with their 2-oxo homologs: evidence for marked π-conjugation in 2-thioxo carbocation 2241
Tokunaga K. see Takeuchi K. 8185
Tokunaga Y. Ihara M. and Fukumoto K. 1,3-Dipolar cycloaddition of 1-carboxynitrone: different stereoselectivity caused by salt effect 6157
Tokunoh R. Tomiyama H. Sodeoka M. and Shibasaki M. Catalytic asymmetric intramolecular cyclopropanation of enol silyl ether. Synthesis of the phorbol CD-ring skeleton 2449
Toledo M. A. see Carreño M. C. 4081
Tolstaya T. P. see Bumagin N. A. 897
Tolvanen A. see Lounasmaa M. 1513
Tomas A. see Boucher J.-L. 3113
Tomé F. see Caballero E. 6951
Tomioka K. see Iida A. 9219
Tomioka K. see Nakagawa Y. 7805
Tomiyama H. see Tokunoh R. 2449
Tomooka K. Nagasawa A. Wei S.-Y. and Nakai T. Chiral dienolate chemistry in remote asymmetric induction: the allylation/Cope rearrangement sequence leading to γ-chiral α,β-unsaturated acid derivatives 8895
Tomooka K. Nagasawa A. Wei S.-Y. and Nakai T. Chiral dienolate chemistry in remote asymmetric induction: the asymmetric aldol/oxy-Cope strategy for asymmetric synthesis of γ,δ-dichiral α,β-unsaturated acid derivatives 8899
Tonellato U. see Carofiglio T. 8019
Tong C. see Kuramoto M. 3867
Toogood P. L. see Kim H. Y. 2349
Toplis D. see Crombie L. 9255
Tor Y. see Tzalis D. 8293
Tordo P. see Mattalia J.-M. 4717
Torii S. see Tanaka H. 5967
Torrens H. see Garcia J. J. 6097
Torres J. L. see Clapés P. 417
Tortato C. see Riego J. M. 513
Tortolani D. R. and Biller S. A. A solid-phase synthesis of miconazole analogs via an iodoetherification reaction 5687
Tortorella P. see Cardellicchio C. 6017
Toshima H. Furumoto Y. Inamura S. and Ichihara A. Synthesis of spiroacetal enol ethers via intramolecular conjugate addition of hemiacetal alkoxides to alkynoates 5707
Toshima H. see Nara S. 6745
Toshima K. Jyojima T. Yamaguchi H. Murase H. Yoshida T. Matsumura S. and Nakata M. Total synthesis of bafilomycin A_1—I. Syntheses of the C5–C11, C12–C17 and C18–C25 segments 1069
Toshima K. Yamaguchi H. Jyojima T. Noguchi Y. Nakata M. and Matsumura S. Total synthesis of bafilomycin A_1—II. The assemblage and completion of the synthesis 1073
Toupet L. see Dambrin V. 6323
Toupet L. see Hercouet A. 4529
Toupet L. see Pellon P. 4713
Tourwé D. see Devadder S. 703
Townsend L. B. see Gudmundsson K. S. 2365
Townsend L. B. see Gudmundsson K. S. 6275
Townsend L. B. see Liu W. 5325
Townsend L. B. see Zhu Z. 1937
Townsend L. B. see Zhu Z. 3263
Toyoda K. see Takakura H. 4043
Toyonari M. see Ochiai M. 8421
Toyota A. Ono Y. Kaneko C. and Hayakawa I. A novel stereoselective synthesis of *cis*-2-fluorocyclopropane-1-carboxylic acid 8507
Toyota K. see Yoshifuji M. 7815
Toyota M. Asoh T. and Fukumoto K.

Palladium catalyzed reductive cyclization reaction in alkaloid synthesis— an enantioselective total synthetic route to (+)-pumiliotoxin C 4401
Toyota M. Yoshida T. Kan Y. Takaoka S. and Asakawa Y. (+)-Cavicularin: a novel optically active cyclic bibenzyl-dihydrophenanthrene derivative from the liverwort *Cavicularia densa* Steph. 4745
Trécourt F. see Mongin F. 6695
Troganis A. see Gerothanassis I. P. 6569
Trogolo C. see D'Annibale A. 7429
Troin Y. see Ibrahim-Ouali M. 37
Troin Y. see Ripoche I. 3991
Troisi L. see Florio S. 4777
Troll T. see Riebel P. 1583
Troll T. see Riebel P. 1587
Tromiczak E. G. see Fields S. C. 1967
Tronche C. Martinez F. N. Horner J. H. Newcomb M. Senn M. and Giese B. Polar substituent and solvent effects on the kinetics of radical reactions with thiols 5845
Trost B. M. and Cook G. R. An asymmetric synthesis (–)-epibatidine 7485
Trost B. M. and Harms A. E. Iterative Pd catalyzed additions for a synthesis of methyl 7,8,11,12 tetradehydroretinoate 3971
Trost B. M. and Lemoine R. C. An asymmetric synthesis of vigabatrin 9161
Trotter J. see Borecka B. 2121
Trotter J. see Fu T. Y. 2125
Trotter J. see Gamlin J. N. 6037
Truong A. see Howell A. R. 8651
Truumees I. see Chu M. 3943
Truumees I. see Chu M. 7229
Try A. C. see Crossley M. J. 6807
Tsai H.-J. Synthesis of phenyl substituted fluoro-olefins 629
Tsai S.-H. see Wu H.-J. 8209
Tsai W.-J. see Shu C.-F. 7055
Tsai Y.-M. Tang K.-H. and Jiaang W.-T. Group transfer from silicon to carbon via tandem radical cyclizations of acylsilanes 7767
Tsao M.-L. see Liu K.-T. 4173
Tsay S.-C. see Hwu J. R. 2035
Tschaen D. M. see Devine P. N. 2683
Tsibouklis J. see Barbu E. 5023
Tso H.-H. and Chandrasekharam M. Generation of isothiazole analogues of *o*-quino-dimethane from isothiazolo-3-sulfolenes 4189
Tso T. S. C. Wan T. S. M. Zhang H.-W. Kwong K.-P. Wong T. Shinohara H. and Inakuma M. Solid phase extraction as a simple method for the enrichment of endohedral metallofullerenes 9249
Tsou N. N. see Kende A. S. 6295
Tsuda K. see Saito T. 209
Tsuda K. see Saito T. 9071
Tsuda M. see Kobayashi J. 6775
Tsuda M. see Kobayashi J. 8203
Tsuge N. see Hayakawa Y. 6363
Tsugeno A. see Takeuchi K. 8185
Tsuji H. see Kitayama K. 4169
Tsuji J. see Uenishi J. 6759
Tsuji M. see Ohwada T. 2609
Tsujimoto M. see Yasui S. 1625
Tsukahara K. Kaneko J. Miyaji T. and Abe K. Charge-transfer interaction between bipyridinium and naphthyl groups of optically active viologens in an aqueous solution 3149
Tsukamoto S. Kato H. Hirota H. and Fusetani N. Pseudoceratidine: a new antifouling spermidine derivative from the marine sponge *Pseudoceratina purpurea* 1439
Tsukamoto S. Kato H. Hirota H. and Fusetani N. Stellettadine A: a new acylated bisguanidinium alkaloid which induces larval metamorphosis in ascidians from a marine sponge *Stelletta* sp. 5555
Tsukube H. see Takagi Y. 4991
Tsukurimichi E. see Morita H. 3739
Tsunoda T. Nagino C. Oguri M. and Itô S. Mitsunobu-type alkylation with active methine compounds 2459
Tsunoda T. Ozaki F. Shirakata N. Tamaoka Y. Yamamoto H. and Itô S. Formation of heterocycles by the Mitsunobu reaction. Stereoselective synthesis of (+)-α-skytanthine 2463
Tsunoda T. Yamamoto H. Goda K. and Itô S. Mitsunobu-type alkylation of *p*-toluenesulfonamide. A convenient new route to primary and secondary amines 2457
Tsunoi S. Ryu I. Muraoka H. Tanaka M. Komatsu M. and Sonoda N. Stannylformylation of vinylcyclopropanes accompanied by radical ring-opening 6729
Tsuruoka H. Shohda K. Wada T. and Sekine M. Synthesis and structural and thermodynamic properties of oligonucleotides containing 2'-*O*-phosphorylated ribonucleosides 6741
Tsurushima T. see Inoue M. 5731
Tsurushima T. see Inoue M. 8823
Tsuruta H. see Imamoto T. 503
Tsuruta O. see Izumi M. 1809
Tsutsui T. see Kiyooka S. 8903
Tu S.-C. see Mager H. I. X. 7885
Tuba Z. see Skoda-Földes R. 2085
Tucker L. M. see Flisak J. R. 4639
Tucker T. T. see Harwood L. M. 4217
Tuinman R. J. see Koreeda M. 8267
Tulinsky A. see Maryanoff B. E. 3667
Tumkevicius S. see Edstrom E. D. 759
Tundo A. see Nanni D. 9337
Turek P. see Ulrich G. 8755
Turek T. C. Gaon I. and Distefano M. D. Analogs of farnesyl pyrophosphate incorporating internal benzoylbenzoate esters: synthesis, inhibition kinetics and photoinactivation of yeast protein farnesyltransferase 4845
Turek T. C. see Gaon I. 8833
Turnbull K. see Krein D. M. 7213
Turner N. J. see Maddrell S. J. 6001
Turner N. J. see Stock H. T. 6575
Turro N. J. see Kaprinidis N. A. 2373
Turro N. J. see Zhang Z. 4861
Tuynman A. see Louwrier S. 905
Tveresovsky V. see Al Dulayymi J. R. 8933
Tworkowski I. see Escudier J.-M. 4689
Tyvorskii V. see Kulinkovich O. 1095
Tzalis D. and Tor Y. Toward self-assembling dendrimers: metal complexation induces the assembly of hyperbranched structures 8293

Tzeng C.-C. see Wang T.-C. 6369

Uchida R. see Shiomi K. 1265
Uchihara Y. see Murashima T. 3133
Uchino H. see Jiao Y. 1039
Ueda I. see Hatanaka M. 89
Ueda I. see Hatanaka M. 401
Ueda I. see Islam Md. S. 5735
Ueda T. see Houkawa T. 1045
Ueda T. see Takai K. 7049
Uehara F. see Sato M. 633
Uehara Y. see Hori H. 2785
Ueki M. Tachibana J. Ishii Y. Okumura J. and Goto M.
N,N'-Dialkyldiamide-type phosphate protecting groups for Fmoc synthesis of phosphotyrosine-containing peptides 4953
Ueki Y. Itoh M. Katoh T. and Terashima S.
Synthesis of various model compounds for the central tricyclic ring system of popolophuanone E 5719
Uemura D. see Chou T. 3871
Uemura D. see Chou T. 4023
Uemura D. see Chou T. 4027
Uemura D. see Kuramoto M. 3867
Uemura D. see Wang G.-Y.-S. 1813
Uemura M. see Kamikawa K. 6359
Uemura M. see Kaneta N. 5385
Uenishi J. Kawahama R. Shiga Y. Yonemitsu O. and Tsuji J.
A general and convenient synthetic method of geometrically pure (*Z*)-1-bromo-1-alkenes 6759
Ueno F. see Hatanaka M. 89
Ueno M. see Uyehara T. 7295
Ueno T. see Inoue M. 5731
Ueno T. see Inoue M. 8823
Ueoka R. Matsumoto Y. Goto K. Ito T. Mori S. Matsumoto Y. Sakoguchi A. Ihara Y. and Hirata F.
A remarkably enhanced diastereoselectivity for the hydrolysis of dipeptide esters responding to pH and temperature in buffer solutions 3461
Ughetto-Monfrin J. see Kreimeyer A. 8739
Uguen D. see Adjé N. 5893
Uguen D. see Domon L. 2773
Uguen D. see Houille O. 625
Uguen D. see Schmittberger T. 29
Uh K. H. see Kim S. 3865
Uhländer C. see Klärner F.-G. 1385
Ujihara K. and Shirahama H.
Total synthesis of (+)-eurylene 2039
Ujjainwalla F. see Magnus P. 6639

Ulrich G. Turek P. and Ziessel R.
Nitroxo spin-labelled calix[4]arene podands and cryptands: allosteric regulation of spin–spin exchange interaction 8755
Ulrich P. see Zhang X. 4667
Uma R. see Mehta G. 1897
Umani-Ronchi A. see Cozzi P. G. 1691
Umani-Ronchi A. see Cozzi P. G. 4613
Undén A. see Kaljuste K. 3031
Undén A. see Karlström A. 4243
Underhill A. E. see Noh D.-Y. 7603
Undheim K. see Mangalagiu I. 1309
Unelius C. R. Eiras A. Witzgall P. Bengtsson M. Kovaleski A. Vilela E. F. and Borg-Karlson A.-K.
Identification and synthesis of the sex pheromone of *Phtheochroa cranaodes* (Lepidoptera: Tortricidae) 1505
Uneyama K. Yan F. Hirama S. and Katagiri T.
Tandem alkylation–defluorination reaction: synthesis of 2-(*N*-alkyl-*N*-aryl)amino-3,3-difluoropropenoates from 2-(*N*-aryl)imino-3,3,3-trifluoropropanoates 2045
Ung A. T. and Pyne S. G.
Synthesis of fluorescent and biotinylated analogues of (1*R*,2*S*,3*R*)-2-acetyl-4(5)-(1,2,3,4-tetrahydroxybutyl)-imidazole 6209
Ungur N. Gavagnin M. and Cimino G.
Synthesis of diastereoisomeric *ent*-isocopalic acid glycerides 3549
Uno H. see Murashima T. 3133
Uno H. see Murashima T. 8391
Uno M. see Ohta S. 2265
Uno M. see Ohta S. 7765
Unverzagt C. see Seifert J. 6527
Uozumi Y. see Hayashi T. 4969
Uozumi Y. see Kamikawa T. 3161
Uozumi Y. see Kitayama K. 4169
Upson R. H. see Gee K. R. 7905
Upton R. J. see Lane S. J. 1
Urabe H. Takeda T. and Sato F.
Intramolecular cyclization of conjugated diene and acetylene with (η^2-propene)Ti(O-*i*-Pr)$_2$. Generation and reaction of titanabicycles having an allyltitanium moiety 1253
Urakami M. see Yagisawa S. 7557
Uramoto M. see Hori H. 2785

Urata H. and Akagi M.
Sequence dependence of thermodynamic stability of heterochiral DNA 5551
Urbain N. see Raussou S. 1599
Urbano A. see Bartolomé J. M. 3187
Urbano A. see Carreño M. C. 4081
Urch C. J. see Grigg R. 695
Urizzi P. Souchard J.-P. and Nepveu F.
EDTA and DTPA analogues of dipalmitoylphosphatidylethanolamine as lipophilic chelating agents for metal labeling of LDL 4685
Urones J. G. Jorge A. Marcos I. S. Basabe P. Díez D. Garrido N. M. Lithgow A. M. da Fonseca M^a O. C. F. and Rodilla J. M. L.
I_2 Rearrangement reaction: synthesis of isofregenedane type diterpenoids 1659
Urpí F. see González A. 8949
Ushigoe Y. Kawamura S. Teshima K. Nojima M. McCullough K. J.
Transformation of 1-alkyl-substituted indene ozonides and the corresponding solvent-derived ozonolysis products to tricyclic peroxides: isolation and characterization of novel hexoxecane derivatives 2093
Ushio-Sata N. Matsunaga S. Fusetani N. Honda K. and Yasumuro K.
Penaramides, which inhibit binding of ω-conotoxin GVIA to N-type Ca^{2+} channels, from the marine sponge *Penares* aff. *incrustans* 225
Utepbergenov D. I. see Khlestkin V. K. 5997
Utsumi N. see Tobe Y. 9325
Uvarova N. I. see Denisenko M. V. 5187
Uyehara T. Murayama T. Sakai K. Ueno M. and Sato T.
Formal substitution at both bridgeheads of a bicyclo-[2.2.2]oct-5-en-2-one and its application to a synthesis of (±)-modhephene 7295
Uzan R. see Glaçon V. 3683
Uzan R. see Marek D. 49
Uzawa J. see Kimura Y. 4961
Uzawa J. see Koshino H. 4549
Uzawa J. see Mimaki Y. 1245
Uzu A. see Itoh T. 91

Vadon S. see Boucher J.-L. 3113
Vaghefi M. M. and Langley K. A.
Stereocontrolled synthesis of nucleoside–methylphosphonat

e–methyl ester diastereomers from mixed anhydride 4853
Vajda K. E. see Schwan A. L. 2345
Vakka C. see Gerothanassis I. P. 6569
Valacchi M. see Mordini A. 5209
Valasinas A. see Kogan M. 763
Valente E. J. see McMills M. C. 7205
Valerio R. M. Bray A. M. and Patsiouras H. Multipin solid phase synthesis of ethers using modified Mitsunobu chemistry 3019
Valero M.-L. Giralt E. and Andreu D. Solid phase-mediated cyclization of head-to-tail peptides: problems associated with side chain anchoring 4229
Valéry J.-M. see Czernecki S. 4003
Valéry J.-M. see Czernecki S. 8857
Vallribera A. see Gálvez N. 6197
Valverde I. see Clapés P. 417
Valverde S. Gómez A. M. López J. C. and Herradón B. Template directed cyclo-glycosylation: effect of the anchoring sites of the spacer and temperature in the regio- and stereo-selectivity of the glycosylation 1105
Van Arman S. A. see Sclafani J. A. 2193
Van Arnum S. D. Ramig K. Stepsus N. A. Dong Y. and Outten R. A. Preparation of 2-styrylthiazoles from 2-methylthiazoles: an improved procedure and mechanistic aspects 8659
Van Arnum S. D. see Ramig K. 443
Van Beek J. see Bartoli G. 2293
van Beek T. A. see Griepink F. C. 411
Van Binst G. see Devadder S. 703
van Boom J. H. see van der Laan A. C. 7857
van Boom J. H. see van Straten N. C. R. 3599
Vanderhoff-Hanaver P. see Maryanoff B. E. 3667
van der Laan A. C. Strömberg R. van Boom J. H. Kuyl-Yeheskiely E. Efimov V. A. and Chakhmakhcheva O. G. An approach towards the synthesis of oligomers containing a *N*-2-hydroxyethyl-aminomethylphosphonate backbone: a novel PNA analogue 7857
van der Marel G. A. see van Straten N. C. R. 3599
van der Merwe T. L. see Holzapfel C. W. 2303
van der Merwe T. L. see Holzapfel C. W. 2307
Van Derveer D. see Bu X. R. 7331
Vander Velde D. G. see Fenoglio I. 3203
Vandewalle M. see Chen Y.-J. 9361
Vandewalle M. see Zhou S.-Z. 7637
Vanelle P. Donini S. Terme T. Maldonado J. Roubaud C. and Crozet M. P. First bis-$S_{RN}1$ in naphthoquinone series 3323
van Hummel G. J. see Boerrigter H. 5167
van Lier J. E. see Sharman W. M. 5831
van Maarseveen J. H. den Hartog J. A. J. Engelen V. Finner E. Visser G. and Kruse C. G. Solid phase ring-closing metathesis: cyclization/cleavage approach towards a seven membered cycloolefin 8249
Van Ornum S. G. and Cook J. M. Generation of four five-membered rings in a one pot process. Studies directed toward the synthesis of dicyclopenta[*a,d*]pentalene via the tandem Pauson–Khand reaction 7185
Vanotti E. see Pinciroli V. 9365
Van Plew D. see Jiang Q. 797
van Straten N. C. R. van der Marel G. A. and van Boom J. H. An expeditious route to the synthesis of adenophostin A 3599
Van Vranken D. L. see Carter D. S. 5629
Vanwetswinkel S. Carlier V. Marchand-Brynaert J. and Fastrez J. Solvolysis of the methoxymethyl protecting group in penicillin derivatives 2761
Vaquer J. see Soderquist J. A. 2561
Vaquero J. J. see Ezquerra J. 683
Vaquero J. J. see Ezquerra J. 5813
Vaquero J. J. see Minguez J. M. 4263
Vaquero J. J. see Vega J. A. 6413
Varaprasad C. V. Bulychev N. Grollman A. P. and Johnson F. Synthesis of 8-oxo-7,8-dihydro-6-*O*-methyl-2'-deoxyguanosine and its use as a probe to study DNA-base excision by MutY enzyme 9
Varese M. see Appendino G. 727
Varese M. see Appendino G. 7837
Varvel G. see Fauq A. H. 1917
Varvoglis A. see Papoutsis I. 913
Varvounis G. see Gerothanassis I. P. 3191
Vasella A. see Ernst A. 7959
Vasquez A. see Smith D. B. 21
Vasquez L. D. see Flores V. 8633
Vasseur J.-J. see Peyrottes S. 5869
Vassilev V. P. see Shibata K. 2791
Vassilikogiannakis G. and Orfanopoulos M. Remote ε- secondary isotope effect in the reaction of tetracyanoethylene with 2,5-dimethyl-2,4-hexadiene. A step-wise mechanism 3075
Vatèle J.-M. see Surivet J.-P. 371
Vatèle J.-M. see Surivet J.-P. 4373
Vatlina L. P. see Samoshin V. V. 3981
Vaultier M. see Ameline G. 8175
Vaultier M. see Garnier L. 6699
Vázquez A. see Méndez J. M. 4099
Vázquez S. see Camps P. 8601
Vázquez S. see Camps P. 8605
Vecchi D. see Chatgilialoglu C. 6383
Vega J. A. Cueto S. Ramos A. Vaquero J. J. García-Navío J. L. Alvarez-Builla J. and Ezquerra J. A microwave synthesis of the *cis* and *trans* isomers of 3-hydroxy-2-(4-methoxyphenyl)-2,3-dihydro-1,5-benzothiazepin-4(5*H*)-one: the influence of solvent and power output on the diastereoselectivity 6413
Velázquez S. M. see Hernández R. 6409
Velmathi S. see Ramadas K. 7665
Velu S. E. see Dieter R. K. 2377
Vemishetti P. see Silverberg L. J. 771
Vencato I. see de Oliveira C. M. A. 6427
Venkataratnam R. V. see Chandra Sheker Reddy A. 2829
Venkataratnam R. V. see Chandra Sheker Reddy A. 2845
Venkateswara Rao B. Kumar V. S. Nagarajan M. Sitaramaiah D. and

Rama Rao A. V.
First synthesis of optically active azamacrolides 8613
Venkateswara Rao B. see Gurjar M. K. 8617
Venkatraman G. Harrison L. J. and Sim K.-Y.
Use of selective INEPT spectroscopy in the structural elucidation of a xanthonolignoid 2643
Venkatraman M. S. see Chavan S. P. 5027
Venkatraman M. S. see Chavan S. P. 2857
Venkatraman S. see Wipf P. 4659
Vennall G. P. see Aggarwal V. K. 3745
Vepsäläinen J. Nupponen H. and Pohjala E.
Bisphosphonic compounds—VIII. A facile and selective one-pot synthesis of P,P-dialkyl(dichloromethylene)bisphosphonate partial esters 3533
Verbicky C. A. see Cebula R. E. J. 8341
Verbist J. F. see Fretté X. C. 2959
Verboom W. see Boerrigter H. 5167
Vercauteren J. see Castagnino C. 7739
Vercauteren J. see Comte G. 2955
Vercauteren J. see Fretté X. C. 2959
Vercauteren J. see Ourtoule J.-C. 4697
Verentchikov A. N. see Polushin N. N. 3227
Verheyden P. see Devadder S. 703
Verhoeven T. R. see Cai D. 2537
Verhoeven T. R. see Davies I. W. 813
Verhoeven T. R. see Davies I. W. 1725
Verhoeven T. R. see Senanayake C. H. 3271
Veronese F. M. see Bonora G. M. 4761
Vetelino M. G. see Coe J. W. 6045
Viallefont P. see Hua T. D. 175
Viaud M.-C. Jamoneau P. Savelon L. and Guillaumet G.
Substituted oxazolo[4,5-*b*]pyridin-2(3*H*)-ones: functionalization at 6-position 2409
Viazzo P. Alphand V. and Furstoss R.
Microbiological transformations—XXXIV. Enantioselective hydrolysis of a key lactone involved in the synthesis of the antidepressant Milnacipran® 4519
Vicens J. see Asfari Z. 3325
Vicens J. see Pulpoka B. 6315
Vicens J. see Pulpoka B. 8747
Vicente M. G. H. Neves M. G. P. M. S. Cavaleiro J. A. S. Hombrecher H. K. and Koll D.
Electrochemical and spectroscopic properties of Cu(II) β-nitro *meso*-tetra(pentafluorophenyl)porphyrins 261
Vicente M. G. H. see Cavaleiro J. A. S. 1893
Vicente M. G. H. see Faustino M. A. F. 3569
Vidal A. see Alajarín M. 8945
Vidal B. see Bennasar M.-L. 3541
Vidari G. see Garlaschelli L. 6223
Viehe H. G. see Laduron F. 5515
Vilaplana M. J. see Molina P. 7829
Vilardo J. S. see Rosenberg R. E. 2185
Vilarrasa J. see Farràs J. 901
Vilarrasa J. see González A. 8949
Vilela E. F. see Unelius C. R. 1505
Villa M.-J. see Collado M. I. 6193
Villa M.-J. see Manteca I. 7841
Villani A. J. see Flisak J. R. 4639
Villemin D. and Liao L.
One-pot three steps synthesis of cerpegin 8733
Villiéras J. see Dambrin V. 6323
Villiéras M. see Dambrin V. 6323
Vincensi M. R. see Napolitano A. 6799
Viossat B. see Boucher J.-L. 3113
Virgilio A. A. Schürer S. C. and Ellman J. A.
Expedient solid-phase synthesis of putative β-turn mimetics incorporating the *i* + 1, *i* + 2, and *i* + 3 sidechains 6961
Viso A. see Fernández de la Pradilla R. 6793
Viso A. see Marino J. P. 8031
Visser G. see van Maarseveen J. H. 8249
Visser J. H. see Griepink F. C. 411
Viswajanani R. see Srikrishna A. 1683
Viswajanani R. see Srikrishna A. 2863
Vita-Finzi P. see Garlaschelli L. 6223
Vítek J. see Fajgar R. 3391
Vitt S. see Orlinkov A. 3363
Vittal J. J. see Cory R. M. 1983
Vittal T. V. S. K. see Rama Rao A. V. 3023
Vivas N. Glories Y. Pianet I. Barbe B. and Laguerre M.
A complete structural and conformational investigation of procyanidin A2 dimer 2015
Viveros O. H. see Spaltenstein A. 1343
Vlasova O. G. see Rakitin O. A. 4589
Vlietinck A. see Cimanga K. 1703
Vlietinck A. see Cimanga K. 3217
Voelter W. see Al-Abed Y. 8641
Voelter W. see Kaiser T. 1187
Voerman S. see Griepink F. C. 411
Vogel P. see Baudat A. 483
Vogel P. see Frérot E. 2023
Vogel P. see Marchionni C. 4149
Vogel P. see Montalbetti C. 2225
Vogeleisen F. see Adjé N. 5893
Vogeleisen F. see Domon L. 2773
Voivodov K. I. Ching J. and Hutchens T. W.
Surface arrays of energy absorbing polymers enabling covalent attachment of biomolecules for subsequent laser-induced uncoupling/desorption 5669
Volante R. P. see Rossen K. 6843
Volante R. P. see Wells K. M. 6439
Volcho K. P. Korchagina D. V. Salakhutdinov N. F. and Barkhash V. A.
Double heterocyclization in the reaction of unconjugated dienes and hydroxyolefins with salicylaldehyde on the askanite–bentonite clay 6181
Vollmann K. see Schmittel M. 999
Volodarsky L. B. see Khlestkin V. K. 5997
Vol'pin M. see Akhrem I. 5775
Vol'pin M. see Orlinkov A. 3363
Vonarx V. see Poignant G. 7511
von Itzstein M. see Kiefel M. J. 7307
von Krosigk U. see Matteucci M. D. 5057
Vonwiller S. C. see Haynes R. K. 253
Vonwiller S. C. see Haynes R. K. 257
Vorbrüggen H. see Klar U. 7497
Vorontsova M. A. see Fissyuk A. S. 5203
Vu B. T. see Jung M. E. 451
Vuilhorgne M. see Bourzat J.-D. 6327
Vuligonda V. Lin Y. and Chandraratna R. A. S.
Selective conversion of α-

tetralones to dihydronaphthalenes 1941
Vyas D. see Kant J. 6495
Vyas D. M. see Mastalerz H. 8683
Vyas D. M. see Mastalerz H. 8687

Wada F. see Ogino T. 7065
Wada T. see Kawahara S. 509
Wada T. see Tsuruoka H. 6741
Wada T. see Zhang Y. 5909
Waddell S. T. and Santorelli G. M. Mild preparation of cephalosporin allyl and *p*-methoxybenzyl esters using diazoalkanes 1971
Wadouachi A. see Marek D. 49
Waechter A.-I. see Duret P. 7043
Waegell B. see Chauvet F. 3695
Waegell B. see Coudret J. L. 2425
Wagner B. Beugelmans R. and Zhu J. Synthesis of hapalosin and 8-deoxy-hapalosin 6557
Wahl F. and Mutter M. Analogues of oxytocin with an oxime bridge using chemoselectively addressable building blocks 6861
Wai J. S. see Butcher J. W. 6685
Waid P. P. Flynn G. A. Huber E. W. and Sabol J. S. Constrained amino acids. An approach to the synthesis of 3-substituted prolines 4091
Wakabayashi T. see Shiozaki M. 7271
Wakabayashi T. see Shiozaki M. 8627
Wakamori N. see Murashima T. 3133
Wakasa N. see Hirosawa C. 6749
Wakayama M. Nemoto H. and Shibuya M. Pyridoxal-mediated cycloaromatization of an enediyne model system 5397
Wakayama M. see Shibuya M. 865
Wakharkar R. D. see Barhate N. B. 2067
Wakharkar R. D. see Ramchandani R. K. 4063
Wakimura K. see Tanabe Y. 1837
Wakselman M. see Mazaleyrat J.-P. 2971
Waldman S. R. Monte A. P. Bracey A. and Nichols D. E. One-pot Claisen rearrangement/*O*-methylation/alkene isomerization in the synthesis of *ortho*-methoxylated phenylisopropylamines 7889
Waldmann H. Heuser A. and Schulze S. Selective enzymatic removal of protecting groups: the phenylacetamide as amino protecting group in phosphopeptide synthesis 8725
Waldmann H. see Lock R. 2753
Waldmann H. see Müller G. H. 3833
Waldmann H. see Schmid U. 3837
Walford S. P. see Blagbrough I. S. 551
Walker C. see Xu Y.-C. 455
Walker G. see Witty D. R. 3067
Walker M. A. An unusual tandem cyclization–Stevens rearrangement mediated by Ph_3P/DEAD or Bu_3P/ADDP 8133
Walker S. D. see Han Y. 2703
Walker, II J. A. see Liu W. 5325
Wallett C. D. see Ramsden C. A. 1901
Wallis A. L. see Malpass J. R. 3911
Walsh D. A. see Elliott A. J. 4339
Walsh D. A. see Elliott A. J. 5829
Walshe N. D. A. see Black G. P. 6943
Walter J. A. see Hu T. 7671
Walton D. R. M. see Benito A. M. 1085
Walton J. C. see Banks J. T. 8059
Walton R. see Crossley M. J. 6807
Walton R. see Matsuo I. 8795
Waltos A. M. see Smith D. B. 21
Wan T. S. M. see Komatsu K. 6153
Wan T. S. M. see Murata Y. 7061
Wan T. S. M. see Tso T. S. C. 9249
Wandrey C. see Seelbach K. 1377
Wang D. see Li C.-J. 4459
Wang D. see Posner G. H. 815
Wang D.-K. Dai L.-X. Hou X.-L. and Zhang Y. Mg and Zn mediated allylation of imines with allyl bromide 4187
Wang G. and Middleton P. J. 5'-*C*-Branched thymidines: synthesis, stereochemistry, and incorporation into oligodeoxynucleotides 2739
Wang G. and Seifert W. E. Synthesis and evaluation of oligodeoxynucleotides containing 4'-*C*-substituted thymidines 6515
Wang G.-Y.-S. Kuramoto M. Uemura D. Yamada A. Yamaguchi K. and Yazawa K. Three novel anti-microfouling nitroalkyl pyridine alkaloids from the Okinawan marine sponge *Callyspongia* sp. 1813
Wang G.-Y.-S. and Crews P. Geodisterol, a novel polyoxygenated sterol with an aromatic A ring from the tropical marine sponge *Geodia* sp. 8145
Wang H. see Saksena A. K. 6821
Wang H. see Saksena A. K. 5657
Wang J. and De Clercq P. J. Estramycins: a potential acyclic diyl precursor derived from estradiol 3395
Wang J. and Scott A. I. A general synthesis of β-aryl and heteroarylpyrroles by palladium-catalyzed coupling reaction of β-tributylstannylpyrrole with aryl and heteroaryl halides 3247
Wang J. see Jao E. 5661
Wang J. see Lau W. Y. 4297
Wang K. K. Zhang Q. and Liao J. Synthesis of 5-methylene-1,3-cyclohexadienes (*o*-isotoluenes) via electrocyclization of (4*Z*)-1,2,4,6-heptatetraenes 4087
Wang L.-X. Fan J.-Q. and Lee Y. C. Chemoenzymatic synthesis of a high-mannose-type *N*-glycopeptide analog with *C*-glycosidic linkage 1975
Wang P. G. see Chen D. 4467
Wang P. G. see Yu L. 2169
Wang Q. see El-Khoury M. 9047
Wang Q. M. and Bruce D. W. Synthesis of calamitic, liquid crystalline porphyrins with lateral aromatic branches 7641
Wang R. and Wong C.-H. Synthesis of sialyl Lewis X mimetics: use of *O*-α-fucosyl-(1*R*,2*R*)-2-amino-cyclohexanol as core structure 5427
Wang R.-B. see Loh T.-P. 2989
Wang S. see Beddoes R. L. 9119
Wang S. see Kohn H. 2337
Wang S. see Kondakov D. Y. 3803
Wang T.-C. Chen Y.-L. Lee K.-H. and Tzeng C.-C. An intermolecular Michael addition of benzene 6369
Wang V. R. see Godjoian G. 433
Wang W. Obeyesekere N. U. and McMurray J. S. Stereospecific synthesis of 4-carboxyphenylalanine and derivatives for use in Fmoc-based solid-phase peptide synthesis 6661

Wang W. see Hanessian S. 7473
Wang W. see Hanessian S. 7477
Wang X. see Gilbertson S. R. 6475
Wang Y. see Wilson S. R. 775
Wang Y. see Ziegler F. E. 6299
Wang Y.-F. Yakovlevsky K. and Margolin A. L.
An efficient synthesis of chiral amino acid and peptide alkylamides via CLEC-subtilisin catalyzed coupling and *in situ* resolution 5317
Wang Y.-P. see Huang X. 7417
Wang Z. and Jimenez L. S.
A total synthesis of (±)-mitomycin K. Oxidation of the mitosene C9–9a double bond by (hexamethylphosphoramido)oxodiperoxomolybdenum(VI) ($MoO_5 \cdot HMPA$) 6049
Wang Z. see Crimmins M. T. 8703
Wang Z.-G. Douglas S. P. and Krepinsky J. J.
Polymer-supported syntheses of oligosaccharides: using dibutylboron triflate to promote glycosylations with glycosyl trichloroacetimidates 6985
Wanninger K. see Reetz M. T. 4499
Ward A. D. see Cooper M. A. 4827
Ward J. A. see Huff B. E. 3655
Ward J. A. see Stille J. R. 9267
Ward R. see Zhang L. 4455
Ward Y. D. and Farina V.
Solid phase synthesis of aryl amines via palladium catalyzed amination of resin-bound aromatic bromides 6993
Warner I. M. see Sánchez Peña M. 5841
Warren S. Wyatt P. McPartlin M. and Woodroffe T.
Synthesis of achiral and homochiral dibenzo[*b,f*]-phosphepin 5-oxides using bromine/lithium exchange. X-Ray structure of (10*R*,11*R*)-10,11-dihydroxy-10,11-dihydro-5-phenyl-5*H*-dibenzo[*b,f*]phosphepin 5-oxide 5609
Warren S. see Cavalla D. 7465
Warren S. see Eames J. 707
Warren S. see Eames J. 1117
Warren S. see Eames J. 3525
Warren S. see Eames J. 4077
Warren S. see Eames J. 4581
Warren S. see Eames J. 4823
Warren S. see Guéguen C. 7461
Warren S. see Mitchell H. J. 2105
Warren S. see Nelson A. 1501
Warren S. see O'Brien P. 3051
Warren S. see O'Brien P. 4271
Warrener R. N. Ferreira A. B. B. and Tiekink E. R. T.
The preparation of rigidly-linked 4,5-diazafluorenes: new molrac bidentate ligand systems 2161
Warrener R. N. Maksimovic L. Pitt I. G. Mahadevan I. Russell R. A. and Tiekink E. R. T.
Fused cyclobutenomaleimides: reactive dienophiles for molrac construction 3773
Warrener R. N. see Butler D. N. 2157
Warrener R. N. see Butler D. N. 2825
Warrier M. see Pitchumani K. 6251
Washio Y. see Ramesh U. 8403
Wasserman H. H. Power P. and Petersen A. K.
Pyrrole photooxidation. A pathway to bipyrrolic products 6657
Wassner G. see Alzeer J. 6857
Wastowski A. D. see Bonacorso H. G. 9155
Watanabe H. see Seto H. 7979
Watanabe M. see Matsumura Y. 5715
Watanabe M. see Matsumura Y. 8063
Watanabe M. see Matsumura Y. 8395
Watanabe N. see Matsumoto M. 397
Watanabe N. see Matsumoto M. 5939
Watanabe N. see Matsumoto M. 8535
Watanabe T. see Kobata K. 2789
Watatani K. see Kobayashi Y. 4385
Watatani K. see Kobayashi Y. 6125
Watkin D. J. see Blériot Y. 7155
Watkin D. J. see Shilvock J. P. 8569
Watson A. A. see Bell A. A. 8561
Watson A. A. see Davis B. 8565
Watson A. A. see Griffiths R. C. 3207
Watson B. M. see Kraus G. A. 5287
Watson N. S. see Chan C. 8925
Watson P. S. see Evans D. A. 3251
Wayner D. D. M. see Snelgrove D. W. 823
Wearing J. T. see Murray R. W. 805
Weber A. see Irngartinger H. 4137
Weber A. see Riebel P. 1583
Weber A. see Riebel P. 1587
Weber B. see Ang K. H. 675
Weber W. see Bertram G. 7955
Wee A. G. H. and Liu B.
The $Rh_2(OAc)_4$ catalysed C–H insertion in chiral ester diazoanilides 145
Wee A. G. H. and Tang F.
Diastereoselectivity in the addition of organocerium reagents to 4- and 5-oxazolidonecarbaldehydes: synthesis of *syn*- and *anti*-alcohols 6677
Weedon A. C. see Quevillon T. M. 3939
Weekly R. M. see Chappie T. A. 6523
Weekly R. M. see Wright D. L. 2165
Weerasuria K. D. V. see Butler D. N. 2157
Wege D. see Ng W. 6797
Weglarz M. A. see Keck G. E. 3291
Wegman M. A. see Thuring J. W. J. F. 4759
Wehler T. and Westman J.
Magic angle spinning NMR: a valuable tool for monitoring the progress of reactions in solid phase synthesis 4771
Wei C. see Kam T.-S. 3603
Wei G. P. see Phillips G. B. 4887
Wei H. and Schlosser M.
2,2-Di(ethoxy)vinyllithium: a synthetic equivalent of the ethyl acetate anion 2771
Wei S. see Heckmann B. 1425
Wei S.-Y. see Tomooka K. 8895
Wei S.-Y. see Tomooka K. 8899
Wei X. and Taylor R. J. K.
Organolithium additions to styrene derivatives: intramolecular alkylation processes 4209
Wei X. see Wu M. 7409
Wei Y. Yang C. and Ding T.
A one-step method to synthesize *N,N'*-bis(4'-aminophenyl)-1,4-quinonenediimine and its derivatives 731
Weidenbruch M. see Kroke E. 3675
Weier R. M. see Khanna I. K. 1355
Weigel L. O. see Audia J. E. 4121
Weigelt D. Kraehmer R. and Welzel P.
New protecting group chemistry in the synthesis of moenomycin analogues 367
Weiler L. see Neeland E. G. 5069
Weill M. see Hua T. D. 175
Weinhouse M. I. see Tamura S. Y. 4109
Weinrich V. see Raposo C. 1485
Weinstock L. M. see Karady S. 8277

Weiss J. see Prévot-Halter I. 1201
Weiss R. G. see Pitchumani K. 6251
Weissman S. A. and Ramachandran P. V. *B*-Iso-2-(2-diethylamino-ethyl)apopinocampheyl-9-borabicyclo[3.3.1]nonyl hydride—an improved chiral reducing agent for straight chain aliphatic ketones 3791
Weisz I. Roboz J. and Bekesi J. G. Acidic coupling and aminolytic TFA cleavage approaches in a new synthesis of an L-*m*-sarcolysin containing anti-tumor tripeptide ester 563
Weitz-Schmidt G. see Marron T. G. 9037
Weitz-Schmidt G. see Woltering T. J. 9033
Welch M. J. see Mishani E. 319
Wells J. A. see Suich D. J. 6653
Wells K. M. Shi Y.-J. Lynch J. E. Humphrey G. R. Volante R. P. and Reider P. J. Regioselective nucleophilic substitutions of fluorobenzene derivatives 6439
Welzel P. see Kempin U. 5087
Welzel P. see Weigelt D. 367
Wendeborn S. Jouanno C. Wolf R. M. and De Mesmaeker A. Replacement of the phosphodiester linkage in oligonucleotides by an acetylenic bond: comparison between carbon-, sulfur-, and oxygen-containing analogs 5511
Wender P. A. Dore T. M. and deLong M. A. An arene–alkene photocycloaddition-radical cyclization cascade: the first syntheses of *cis,cis,cis,trans*-[5.5.5.5]-fenestranes 7687
Wendt J. A. and Aubé J. Toward the synthesis of sparteine: intramolecular Schmidt reactions on a norbornanone platform 1531
Weng H. and Roth H. D. Electron donor–acceptor photochemistry of 1-cyano-naphthalene with norbornadiene: stereospecific regiorandom [2 + 2] cycloaddition 4895
Wengel J. see Singh S. K. 7619
Wensbo D. see Apelqvist T. 1471
Wenschuh H. Beyermann M. Winter R. Bienert M. Ionescu D. and Carpino L. A. Fmoc amino acid fluorides in peptide synthesis—extension of the method to extremely hindered amino acids 5483
Wentrup C. see Adam W. 2113
Wentz A. P. see Bonacorso H. G. 9155
West C. A. Sanchez A. M. Hanon-Aragon K. A. Salazar I. C. and Menger F. M. Preparation and characterization of a simple destructible surfactant 9135
West P. see Hill D. R. 787
Westlund N. see Clayden J. 5577
Westman G. see Perlmutter P. 1715
Westman J. see Wehler T. 4771
Westmeyer M. D. see South M. S. 1351
Westwood N. see Magnus P. 6639
Wheatley J. R. see Shilvock J. P. 8569
Whitby R. J. see Bell L. 7139
Whitby R. J. see Luker T. 7661
White A. H. see Bremner J. B. 8573
White A. J. P. see Ashton P. R. 6217
White C. R. see Andrews I. P. 4811
White E. H. see Paik S. 4663
Whitehead C. C. see Byers J. H. 2743
Whitehead R. C. see Baldwin J. E. 6919
Whitehead R. C. see Baldwin J. E. 6923
Whitesell J. K. and Apodaca R. Trimethylsilylcyanation of aldehydes and ketones catalyzed by diorganotin dichlorides 2525
Whitesell J. K. and Apodaca R. A convenient synthesis of protected and free homoallylic alcohols: catalytic use of dibutyltin dichloride in the allylation of aldehydes with allyltributyltin 3955
Whiting A. see Morgan P. E. 4795
Whitley P. E. see Enholm E. J. 559
Whittaker M. see Floyd C. D. 8045
Whittern D. see Hill D. R. 787
Whittingham W. G. see Clark J. S. 5605
Wiberg K. B. Snoonian J. R. and Lahti P. M. Ring contraction of a two-carbon bridged spiropentane 8285
Wicha J. see Achmatowicz B. 5589
Wicha J. see Michalak K. 7657
Widdowson D. A. see Archer I. V. J. 8819
Widlanski T. S. see Xie M. 4443
Wiersum U. E. see Sarobe M. 1121
Wiggermann A. see Kreiser W. 7119
Wilcox R. A. see Fauq A. H. 1917
Wilczewska A. Z. see Morzycki J. W. 2079
Wilkes R. D. see Blades K. 6403
Wilkes R. D. see Patel S. T. 5183
Wilkinson A.-S. see Brown T. 5413
Wille G. see Mayer G. 4483
Willemsen J. J. see Meyers A. I. 791
Willett N. J. see McNicholas C. 8053
Willetts A. J. see Maddrell S. J. 6001
Williams C. M. see Ang K. H. 675
Williams D. B. G. see Grové J. J. C. 1305
Williams D. B. G. see Grové J. J. C. 5817
Williams D. J. see Ashton P. R. 6217
Williams D. J. see Fonte P. 6201
Williams D. J. see Fonte P. 6205
Williams D. J. see Kohnke F. H. 4593
Williams D. R. Brooks D. A. Moore J. L. and Stewart A. O. The preparation and Wittig condensations of C-4 thiazole phosphonium methylides 983
Williams J. M. J. see Allen J. V. 1859
Williams J. M. see Brands K. M. J. 2919
Williams J. M. see Parakka J. P. 8085
Williams J. M. J. see Dinh P. M. 7623
Williams M. see McGill J. M. 3977
Williams N. E. see Singh P. R. 4117
Williams P. G. see Saljoughian M. 2923
Williams R. M. and Cao J. Studies on the total synthesis of paraherquamide A. Stereocontrolled, asymmetric synthesis of α-alkyl-β-hydroxyproline derivatives 5441
Williams R. M. see Yuan C. 1945
Williard P. G. see Nair V. 2315
Williard P. G. see Nair V. 8271
Willis A. C. see Benjamin L. J. 8937
Willis C. L. see Kelly N. M. 1517
Willms S. see Kroke E. 3675
Willoughby C. A. and Chapman K. T.

Solid phase synthesis of aryl amines 7181
Wills M. see Gamble M. P. 2853
Wilmouth S. see Pellissier H. 5107
Wilson D. see Casaschi A. 4413
Wilson D. see Grigg R. 4609
Wilson D. B. see Galopin C. C. 8675
Wilson F. X. see Clayden J. 5577
Wilson N. S. and Keay B. A. A mild palladium(II) catalyzed desilylation of phenolic *t*-butyldimethylsilyl ethers 153
Wilson P. see Ruan Z. 3619
Wilson P. D. see Wong T. 755
Wilson R. M. see Schnapp K. A. 2317
Wilson S. R. Wang Y. Cao J. and Tan X. Amino acids as precursors for N-unsubstituted fullero-pyrrolidine derivatives 775
Wilson T. E. see Kim J.-M. 5309
Wilson T. E. see Paikoff S. J. 5653
Wilson W. D. see Lorente A. 4417
Winkler J. D. Bhattacharya S. K. and Batey R. A. Synthesis of a taxinine analog via the intramolecular Diels–Alder cycloaddition 8069
Winkler J. D. Stelmach J. E. and Axten J. Two highly efficient syntheses of scalemic azocines 4317
Winter R. see Wenschuh H. 5483
Winternitz F. see Gouilleux L. 7031
Winton P. L. see Kelly N. M. 1517
Winum J.-Y. Kamal M. Leydet A. Roque J.-P. and Montero J.-L. Homologation of carboxylic acids by Arndt–Eistert reaction under ultrasonic waves 1781
Wipf P. and Venkatraman S. An improved protocol for azole synthesis with PEG-supported Burgess reagent 4659
Wipf P. see Goldstein D. M. 739
Wirsching P. see Sakurai M. 5479
Wise D. S. see Liu W. 5325
Witty D. R. Walker G. Bateson J. H. O'Hanlon P. J. Eggleston D. S. and Haltiwanger R. C. Synthesis of conformationally restricted analogues of the tryptophanyl tRNA synthetase inhibitor indolmycin 3067
Witzgall P. see Unelius C. R. 1505
Wöhrle I. Claßen A. Peterek M. and Scharf H.-D. The first total synthesis of 15-*epi*-annonin I 7001
Woisel P. see Couture A. 3697
Woiwode T. F. see Zhang C. 751
Wolf J.-G. see Rivière F. 6717
Wolf R. M. see Wendeborn S. 5511
Wolfart V. see Gleiter R. 479
Wolff C. see Averdung J. 4683
Woliñska E. see Rykowski A. 5795
Woltering T. J. Weitz-Schmidt G. and Wong C.-H. *C*-Fucopeptides as selectin antagonists: attachment of lipid moieties enhances the activity 9033
Woltering T. J. see Marron T. G. 9037
Won D. H. see Jeong I. H. 7665
Won D. H. see Jeong I. H. 5905
Wong C.-H. see Alper P. B. 6029
Wong C.-H. see Hung S.-C. 4903
Wong C.-H. see Marron T. G. 9037
Wong C.-H. see Shibata K. 2791
Wong C.-H. see Takayama S. 6287
Wong C.-H. see Takayama S. 9271
Wong C.-H. see Wang R. 5427
Wong C.-H. see Woltering T. J. 9033
Wong T. Tjepkema M. W. Audrain H. Wilson P. D. and Fallis A. G. A versatile synthesis of (*E*)- and (*Z*)-1-halo-2-(alkoxy-methyl)-1,3-butadienes and their condensation with aldehydes 755
Wong T. see Komatsu K. 6153
Wong T. see Tso T. S. C. 9249
Wong-Lun-Sang S. Bernardini J.-J. Hennard C. Kyslík P. Dell A. and Abdallah M. A. Bacterial siderophores: structure elucidation, 2D ^{1}H and ^{13}C NMR assignments of pyoverdins produced by *Pseudomonas fluorescens* CHAO 3329
Wood J. L. Stoltz B. M. Onwueme K. and Goodman S. N. The synthesis of desamido analogs of staurosporine, RK-286c, and TAN-1030a 7335
Wood J. L. see Fortunak J. M. D. 5679
Wood J. L. see Fortunak J. M. D. 5683
Wood J. L. see Stoltz B. M. 3929
Wood M. E. see Baldwin J. E. 6923
Woodgate P. D. see Pearson A. J. 3087
Woodroffe T. see Warren S. 5609
Woods M. see Adger B. 6399
Works A. B. see Roush W. R. 8065
Wormald M. R. see Griffiths R. C. 3207
Wright D. L. Weekly R. M. Groff R. and McMills M. C. A metallocarbenoid approach to the formation of spirocyclic ammonium ylides leading to the preparation of medium-sized azacane rings 2165
Wright D. L. see McMills M. C. 7205
Wright J. L. C. see Hu T. 7671
Wright S. W. Dow R. L. McClure L. D. and Hageman D. L. A synthesis of functionalized indoline 2,2-biscarboxylates 6965
Wright S. W. McClure L. D. and Hageman D. L. A convenient modification of the Gassman oxindole synthesis 4631
Wu A. D. see Sharma S. K. 5665
Wu C.-L. see Liu H.-J. 9307
Wu H.-J. Tsai S.-H. and Chung W.-S. Iodine-induced cyclization reaction of *endo*-thioester substituted norbornenes followed by methylthio group rearrangement 8209
Wu H.-J. Yen C.-H. and Chuang C.-T. Intramolecular Diels–Alder reaction of furans with allenyl ethers followed by trimethylsilyl group 1,2-rearrangement and Brook rearrangement 7395
Wu J. Shull B. K. and Koreeda M. 1-[2-(Trimethylsilyl)ethoxy]-ethyl (SEE): a novel hybrid hydroxy-protecting group between 1-(ethoxy)ethyl (EE) and 2-(trimethylsilyl)ethoxy-methyl (SEM) 3647
Wu J. see Eisenberg S. W. E. 7683
Wu J. see Gordeev M. F. 4643
Wu J. J. see Barnett-Thamattoor L. 7221
Wu M. Wei X. Qi L. and Xu Z. A new method for facile and selective generation of C_{60}^{-} and C_{60}^{2-} in aqueous caustic/THF(or DMSO) 7409
Wu M.-C. see Leung W.-H. 891

Wu M.-J. see McGrath D. V. 6077
Wu N. see Frey D. A. 8317
Wu P.-L. see Wu T.-S. 7819
Wu T. see Cochran J. E. 2903
Wu T.-S. Huang S.-C. and Wu P.-L. Carbazole-pyranocoumarin dimer and binary carbazole alkaloid from *Clausena excavata* 7819
Wu W.-L. see Gao Y. 893
Wu W.-L. see Hart D. J. 5283
Wu X. see Khim S.-K. 571
Wu Y. see Myers A. G. 3083
Wu Y.-L. see Gao Y. 893
Wu Y.-L. see Li Y.-L. 7413
Wyatt P. see Warren S. 5609
Wyatt P. B. see Arvanitis E. 4277
Wythes M. J. see Macor J. E. 4289

Xi C. see Takahashi T. 7521
Xi Z. see Takahashi T. 7521
Xia X. see Captain L. F. 4293
Xiang J. S. and Fuchs P. L. Mechanistic aspects of the C–H alkynylation reaction of acetylenic triflones. Determination of phenyl versus cyclohexyl migratory aptitude for a vinylidine carbene 5269
Xiang T.-J. see Schwan A. L. 2345
Xiang Y. Chen J. Schinazi R. F. and Zhao K. Corrigendum 3779
Xiang Y. Gong Y. and Zhao K. Enantioselective synthesis of isoxazolidinyl thymine and cytosine nucleosides 4877
Xiao D. Schreier J. A. Cook J. H. Seybold P. G. and Ketcha D. M. Reversible Friedel–Crafts acylations of 3-alkyl-1-(phenylsulfonyl)pyrroles: application to the synthesis of an ant trail pheromone 1523
Xiao J. Nefkens S. C. A. Jessop P. G. Ikariya T. and Noyori R. Asymmetric hydrogenation of α,β-unsaturated carboxylic acids in supercritical carbon dioxide 2813
Xie J. see Czernecki S. 9193
Xie L. see Katritzky A. R. 347
Xie M. and Widlanski T. S. A new protecting group for the synthesis of complex sulfonates 4443
Xie M. see Robins M. J. 3921
Xin Z. and Just G. Diastereoselective synthesis of phosphite triesters 969
Xu D. Mattner P. G. Prasad K. Repic O. and Blacklock T. J. An expeditious synthesis of a biscyclam with an aromatic linker 5301
Xu G. see Clennan E. L. 2911
Xu J. and Yadan J. C. First synthesis of (+)-brazilane from (+)-brazilin 2421
Xu L.-H. see Grigg R. 4251
Xu R. Chu G. and Bai D. Total synthesis of (±) epibatidine 1463
Xu W. see Ramachandran P. V. 4911
Xu W. see Ying T. 3885
Xu Y. Yakushijin K. and Horne D. A. Transbromination of brominated pyrrole and imidazole derivatives: synthesis of the $C_{11}N_5$ marine alkaloid stevensine 8121
Xu Y. see Bassindale A. R. 555
Xu Y.-C. Bizuneh A. and Walker C. Selective deprotection of alkyl esters using magnesium methoxide 455
Xu Y.-M. and Zhou W.-S. A new approach to 1-deoxy-azasugars: asymmetric synthesis of deoxymanno-jirimycin 1461
Xu Z. see Wu M. 7409
Xu Z.-Q. see Chen W. 8975
Xue L. Lu L. Pedersen S. Liu Q. Narske R. and Burton D. J. A novel stereospecific route to *E* and *Z*-2-substituted-1,2-difluoroethenylstannanes 1921
Xue S. see Moss R. A. 1929

Yadan J. C. see Xu J. 2421
Yadav G. D. and Thorat T. S. Role of benzyl ether in the inversion of reactivities in Friedel–Crafts benzylation of toluene by benzyl chloride and benzyl alcohol 5405
Yadav J. S. Chandrasekhar S. Sumithra G. and Kache R. Selective and unprecedented oxidative deprotection of allyl ethers with DDQ 6603
Yadav J. S. see Chandrasekhar S. 1645
Yaegashi K. see Mori Y. 2605
Yaegashi K. see Mori Y. 6959
Yaegashi S. see Kubo K. 5917
Yagami T. see Futaki S. 201
Yagisawa S. and Urakami M. A rapid reaction releasing the carboxyl terminal residues of peptides 7557
Yago S. see Sato M. 9063
Yahioglu G. see Milgrom L. R. 4069
Yakovlevsky K. see Wang Y.-F. 5317
Yakushijin K. see Xu Y. 8121
Yamada A. see Wang G.-Y.-S. 1813
Yamada H. Aoyagi S. and Kibayashi C. Exploitation of palladium-catalyzed reductive enyne cyclization in the synthesis of (−)-4a,5-dihydrostreptazolin 8787
Yamada H. see Takahashi T. 2433
Yamada K. see Kohmoto S. 7761
Yamada K. see Kohmoto S. 8879
Yamada K. see Kuramoto M. 3867
Yamada K. see Mutou T. 7299
Yamada K. see Suenaga K. 5151
Yamada K. see Suenaga K. 6771
Yamada N. see Kittaka A. 2801
Yamada N. see Nemoto H. 6355
Yamada S. and Ohe T. Kinetic resolution of *sec*-alcohols with axially chiral twisted amides 6777
Yamada S. see Iwasaki Y. 6753
Yamada T. see Takahashi C. 655
Yamada T. see Teranishi K. 8425
Yamada Y. see Miyaoka H. 7107
Yamada Y. see Miyaoka H. 7407
Yamada Y. see Sakuda S. 5711
Yamada Y. see Shimano M. 7553
Yamagata Y. see Nishizono N. 7569
Yamaguchi H. see Konishi H. 8547
Yamaguchi H. see Toshima K. 1069
Yamaguchi H. see Toshima K. 1073
Yamaguchi K. see Azumaya I. 5003
Yamaguchi K. see Hatanaka K. 873
Yamaguchi K. see Hatanaka K. 877
Yamaguchi K. see Imamoto T. 503
Yamaguchi K. see Ishida K. 9225
Yamaguchi K. see Okada S. 1065
Yamaguchi K. see Wang G.-Y.-S. 1813
Yamaguchi S. and Tamao K. Synthesis, structure, and absorption spectra of the well-defined 1,1'-bicyclopentadiene derivatives 2983
Yamamori Y. see Mori Y. 2605
Yamamori Y. see Mori Y. 6959
Yamamoto A. see Shimizu I. 7115
Yamamoto A. see Yasuda M. 5951
Yamamoto G. see Higuchi H. 2601
Yamamoto H. see Hayakawa Y. 6363

Yamamoto H. see Kanemasa S. 8505
Yamamoto H. see Tsunoda T. 2457
Yamamoto H. see Tsunoda T. 2463
Yamamoto K. see Doi T. 6877
Yamamoto M. see Kohmoto S. 7761
Yamamoto M. see Kohmoto S. 8879
Yamamoto S. see Tanaka T. 7809
Yamamoto T. see Okuma K. 8883
Yamamoto Y. Kimachi T. Kanaoka Y. Kato S. Bessho K. Matsumoto T. Kusakabe T. and Sugiura Y. Synthesis and DNA binding properties of amide bond-modified analogues related to distamycin 7801
Yamamoto Y. see Cai J. 3383
Yamamoto Y. see Ibuka T. 2849
Yamamoto Y. see Kadota I. 2109
Yamamoto Y. see Kadota I. 3059
Yamamoto Y. see Kadota I. 3195
Yamamoto Y. see Meguro M. 7453
Yamamoto Y. see Nemoto H. 539
Yamamoto Y. see Sato K. 2799
Yamamura H. see Araki S. 8417
Yamamura H. see Fujita K. 1825
Yamamura K. Yamane T. Hashimoto M. Miyake H. and Nakatsuji S. A novel synthesis of β-(10-benz[*a*]azulenyl)-α,β-unsaturated ketones by intramolecular cyclization of *o*-[2-furyl]cycloheptatrienylbenzenes 4965
Yamamura S. see Ishibashi Y. 2997
Yamamura S. see Konishi H. 8791
Yamamura S. see Li S. 7365
Yamamura S. see Nakamura K. 191
Yamamura S. see Ohmori K. 3467
Yamamura S. see Takakura H. 4043
Yamana K. Yoshikawa A. and Nakano H. Synthesis of a new photoisomerizable linker for connecting two oligonucleotide segments 637
Yamana K. and Nakano H. The Lewis acid-promoted reactions of *o*-phthalaldehyde with trialkyl phosphites: formation of 1-dialkoxyphosphorylisobenzofuran 5963
Yamanaka H. Takekawa T. Morita K. Ishihara T. and Gupton J. T. Preparation of novel β-trifluoromethyl vinamidinium salt and its synthetic application to trifluoromethylated heterocycles 1829
Yamanaka T. Seki M. Kuroda T. Ohmizu H. and Iwasaki T. Highly stereoselective and practical synthesis of a key intermediate for 1-β-methylcarbapenems 4967
Yamanaka T. see Seki M. 5565
Yamane T. see Yamamura K. 4965
Yamashita K. and Sato F. Highly efficient synthesis of allylic alcohols having an α-alkoxyalkyl group at their β-position via regioselective addition reaction of titanium–propargyl ether complexes with carbonyl compounds 7275
Yamashita M. Okuyama K. Kawasaki I. and Ohta S. Stereoselective dimerization of α-keto amides using samarium diiodide 7755
Yamashita S. see Matsumoto M. 397
Yamashita T. Sato D. Kiyoto T. Kumar A. and Koga K. An approach to catalytic asymmetric deprotonation of 4-substituted cyclohexanones 8195
Yamashita T. see Kaneda K. 4555
Yamauchi K. see Hojo H. 7391
Yamazaki N. Suzuki H. Aoyagi S. and Kibayashi C. Lewis acid-mediated nucleophilic alkylations on chiral [6,3a,4]oxadiazaindano-[5,4-*a*]isoquinolines. Asymmetric synthesis of 1-alkyl substituted tetrahydroisoquinolines 6161
Yan B. and Gstach H. An indazole synthesis on solid support monitored by single bead FTIR microspectroscopy 8325
Yan F. see Uneyama K. 2045
Yanabu N. see Kodama Y. 1061
Yanabu N. see Kodama Y. 2515
Yanada K. see Yanada R. 9313
Yanada R. Negoro N. Yanada K. and Fujita T. Reductive dehalogenation of aliphatic *vic*-dihalides with metallic samarium in a methanolic medium 9313
Yanagi K. see Hasegawa E. 7079
Yanagihara Y. see Matsumura Y. 8395
Yanase N. see Miki Y. 7753
Yang B. H. see Myers A. G. 3623
Yang C. see Wei Y. 731
Yang C.-Y. see Chen B. 8205
Yang F. see Martin O. R. 1991
Yang J. see Koreeda M. 8267
Yang J. see Zafar A. 2327
Yang J.-F. see Sha C.-K. 3487
Yang J.-F. see Sha C.-K. 6959
Yang L. and Guo L. Pictet–Spengler reaction on solid support 5041
Yang L.-X. and Hofer K. G. Reductive amination of nitroimidazole aldehyde with diamines using sodium triacetoxyborohydride 6081
Yang M. G. see Evans D. A. 1957
Yang P.-K. see Chou S.-S. P. 7279
Yang R. see Maehr H. 5445
Yang R.-Y. see Hanessian S. 5273
Yang R.-Y. see Hanessian S. 5835
Yang R.-Y. see Hanessian S. 8997
Yang T.-F. Kim H. Kotra L. P. and Chu C. K. Design and synthesis of 2'-hydroxyethylcyclopropyl carbocyclic nucleosides 8849
Yang T.-K. Chu H.-Y. Lee D.-S. Jiang Y.-Z. and Chou T.-S. The study of Lewis acid effect on asymmetric Diels–Alder reactions of new 2-sulfinylbutadienes derived from (1*R*,2*S*,3*R*)-3-mercaptocamphan-2-ol 4537
Yang X.-S. see Fuji K. 7373
Yano M. Sato K. Shiomi D. Ichimura A. Abe K. Takui T. and Itoh K. Synthesis of 1,3-bis(diarylamino)benzenes as model precursors for one-dimensional organic ferromagnetic metals; characterization of the dications by cyclic voltammetry and electron spin transient nutation spectroscopy 9207
Yao C.-F. Chen W.-C. and Lin Y.-M. Reactions of β-nitrostyrenes with Grignard reagents 6339
Yao W. see Hirschmann R. 5637
Yaouanc J. J. see Gardinier I. 7711

Yarborough R. see Phife D. W. 5227
Yashunsky D. V. Ponomarev G. V. and Arnold D. P. Chemistry of dimethylamino-methylporphyrins. New synthesis of *meso*-methyl-porphyrins via triphenylpor-phyrinylmethylphosphonium iodides 7147
Yaslak S. see Klärner F.-G. 1385
Yasuda I. see Takano I. 7053
Yasuda K. Shindo M. and Koga K. Enantioselective Michael reaction of ketone lithium enolates using a chiral amine ligand 6343
Yasuda M. Sugawa Y. Yamamoto A. Shibata I. and Baba A. Allylic tin(IV)–tin(II) chloride–acetonitrile as a novel system for allylation of carbonyls or imines 5951
Yasuda M. see Kobayashi S. 5569
Yasuda S. see Tatsuta K. 2453
Yasui S. Shioji K. Tsujimoto M. and Ohno A. An intramolecular Arbuzov rearrangement initiated by anodic oxidation 1625
Yasukochi T. see Fukase K. 3343
Yasukochi T. see Fukase K. 6763
Yasumoto T. see Matsumori N. 1269
Yasumoto T. see Satake M. 5955
Yasumoto T. see Takahashi H. 7087
Yasumuro K. see Ushio-Sata N. 225
Yates M. H. see Ciufolini M. A. 2881
Yazawa K. see Chou T. 3871
Yazawa K. see Wang G.-Y.-S. 1813
Yazawa S. see Izumi M. 1809
Ye B. see Gao Y. 893
Ye D.-Y. see Chen B. 8205
Ye J. see Bhatt R. K. 3811
Yeh M.-C. P. see Lai M.-L. 6149
Yeh M.-C. P. see Blankenfeldt W. 7361
Yeh Y.-L. see Chou T.-C. 8779
Yen C.-H. see Wu H.-J. 7395
Yeung L.-L. see Haynes R. K. 4729
Yeung L.-L. see Lam W. W.-L. 4733
Yeung L.-L. see Leung W.-H. 891
Ying T. Bao W. Zhang Y. and Xu W. An alternative route to 1,3-diketones promoted by samarium diiodide 3885
Yoda H. Nakajima T. and Takabe K. Total synthesis of natural (–)-codonopsinine employing stereoselective reduction of quaternary α-hydroxy-pyrrolidine 5531
Yoganathan K. see Kam T.-S. 3603
Yoganathan K. see Kam T.-S. 5765
Yoganathan K. see Kam T.-S. 8811
Yokogawa K. see Kita Y. 7545
Yokoi T. see Okada Y. 2249
Yokota H. see Higuchi H. 1617
Yokoyama M. see Muraki T. 2441
Yokoyama M. see Togo H. 6129
Yokoyama R. see Arimoto H. 4749
Yokoyama Y. Kondo K. Mitsuhashi M. and Murakami Y. Total synthesis of optically active chanoclavine-I 9309
Yokoyama Y. see Kamata M. 3483
Yoneda E. see Shimizu R. 5557
Yoneda N. see Hara S. 8511
Yonei S. see Sugiyama H. 9067
Yonemitsu O. see Makino K. 9073
Yonemitsu O. see Makino K. 9077
Yonemitsu O. see Matsushima T. 385
Yonemitsu O. see Uenishi J. 6759
Yong K. see Batey R. A. 6847
Yoo I.-D. see Koshino H. 4549
Yoo I.-D. see Yun B.-S. 8529
Yoon C. H. see Lee E. 5929
Yoon N. M. Park K. B. Lee H. J. and Choi J. The semihydrogenation of acetylenes over Pd catalyst on BER in the presence of CsI 8527
Yoon N. M. see Choi J. 1057
Yoon N. M. see Sim T. B. 3137
Yoon Y.-J. see Cho S.-D. 7059
Yoshida A. see Mikami K. 8515
Yoshida J. Sugawara M. and Kise N. Organothio groups as electro-auxiliaries: electrooxidative inter- and intramolecular carbon–carbon bond formation 3157
Yoshida K. see Iida K. 4997
Yoshida K. see Seto H. 4179
Yoshida M. see Fukase K. 6763
Yoshida M. see Iyoda M. 7987
Yoshida S. see Seto H. 4179
Yoshida T. see Sujino K. 6133
Yoshida T. see Toshima K. 1069
Yoshida T. see Toyota M. 4745
Yoshida W. Y. see Nakao Y. 8993
Yoshida Y. see Kita Y. 1817
Yoshifuji M. Shinohara N. and Toyota K. Application of 1,2-bis(2-bromo-3,5-di-*t*-butyl-phenyl)ethane to preparation of compounds having two diphosphene units 7815
Yoshihara K. see Shinada T. 7099
Yoshihara T. see Jiao Y. 1039
Yoshikawa A. see Yamana K. 637
Yoshikawa K. see Kobata K. 2789
Yoshimatsu M. Hayashi M. Tanabe G. and Muraoka O. A regioselective addition reaction of a sulfonyl radical to conjugate enynesulfones: a convenient synthesis of 1,4-bis(arylsulfonyl)-1,3-butadiene 4161
Yoshimatsu M. and Hasegawa J. Regio- and stereoselective vinylic substitution reactions of α-haloenyne sulfones 7381
Yoshimoto Y. see Matsumura Y. 5715
Yoshimoto Y. see Matsumura Y. 8063
Yoshimura K. and Fukazawa Y. C–H acidity effect of guest molecules on the complex-ation with monomethyl ether of monodeoxycalix[4]arene 1435
Yoshimura M. see Ohta S. 2265
Yoshimura T. see Morita H. 3739
Yoshino T. Nagata Y. Itoh E. Hashimoto M. Katoh T. and Terashima S. Total synthesis of natural (+)-FR900482—II. Efficient syntheses of the aromatic and the optically active aliphatic fragments 3475
Yoshino T. see Katoh T. 3471
Yoshino T. see Katoh T. 3479
Yoshizawa K. see Masaki Y. 9321
You Z. and Lee H. J. One step conversion of highly dipolarophilic olefins to α-hydroxy-β-cyano-adducts with metal fulminate 1165
Young D. W. see Bradley E. L. 7329
Young D. G. J. Hale M. R. and Hoveyda A. H. Highly diastereoselective hydrosilation reactions. Spirocyclic siloxanes: sources of Si-based Lewis acids 827
Young D. J. see Cokley T. M. 1905

Young D. W. see Bradley E. L. 6935
Young D. W. see Davies G. M. 5601
Young D. W. see Galt R. H. B. 8035
Young R. J. see Shaw-Ponter S. 1867
Young R. J. see Shaw-Ponter S. 1871
Young R. N. see Han Y. 2703
Yu C. and Taylor J. W. A new strategy applied to the synthesis of an α-helical bicyclic peptide constrained by two overlapping i, i+7 side-chain bridges of novel design 1731
Yu C.-M. Choi H.-S. Jung W.-H. and Lee S.-S. Catalytic asymmetric allylation of aldehydes with BINOL–Ti(IV) complex accelerated by *i*-PrSSiMe$_3$ 7095
Yu D. see Iyer R. P. 1539
Yu D. see Iyer R. P. 1543
Yu D. W. Preuss K. E. Cassis P. R. Dejikhangsar T. D. and Dibble P. W. Naphtho[1,2-*c*;5,6-*c*]difuran, a stable isobenzofuran derivative 8845
Yu E. see Ha D.-C. 2577
Yu H.-B. and Huang W.-Y. A new approach to polyfluoroalkyl imidoyl iodide 7999
Yu J. see Lai J.-Y. 7167
Yu L. Chen D. and Wang P. G. Aqueous aza Diels–Alder reactions catalyzed by lanthanide(III) trifluoromethanesulfonates 2169
Yu L. see Chen D. 4467
Yu M.-T. see Leung W.-H. 891
Yuan C. and Williams R. M. An efficient method for the preparation of amidinoureas 1945
Yuan D.-Q. see Chen W.-H. 7561
Yue X. Qing F. Sun H. and Fan J. A Suzuki coupling approach to double bonds locked analogues of strobilurin A 8213
Yue X. and Li Y. Studies on macrocyclic diterpenoids—XIX. Total synthesis of (*RR/SS*)-sinulariol-B 671
Yun B.-S. Ryoo I.-J. Kim W.-G. Kim J.-P. Koshino H. Seto H. and Yoo I.-D. Structures of phenazostatins A and B, neuronal cell protecting substances of microbial origin 8529
Yun C.-S. see Ha D.-C. 2577
Yun W. and Mohan R. Heck reaction on solid support: synthesis of indole analogs 7189
Yus M. see Alonso F. 6925
Yus M. see Guijarro A. 5593
Yus M. see Guijarro A. 5597
Yusoff M. M. and Talaty E. R. Ring-expansion of an aziridinone to a hexahydrotriazine through the agency of a novel rearrangement 8695

Zafar A. Yang J. Geib S. J. and Hamilton A. D. Linked bis-isophthalic acid derivatives as building blocks in the design of self-assembling structures 2327
Zahouily M. Caron G. Carrupt P.-A. Knouzi N. and Renaud P. Diastereoselective radical alkylations of alkyl aryl sulfoxides 8387
Zahra J.-P. see Chauvet F. 3695
Zaidi J. H. see Fauq A. H. 1917
Zaidlewicz M. and Krzeminski M. Syntheses with organoboranes—VI. Kinetic resolution of vinylic epoxides by the reduction with chiral dialkylboranes 7131
Zain R. see Bollmark M. 3537
Zajc B. see Lakshman M. K. 2529
Zaldívar J. M. see Riego J. M. 513
Zamir L. O. Zheng Y. F. Caron G. Sauriol F. and Mamer O. Rearrangement of the major taxane from *Taxus canadensis* 6435
Zanatta N. see Bonacorso H. G. 9155
Zanda M. see Bravo P. 6005
Zanirato V. see Barco A. 7599
Zannetti M. T. see Banfi L. 521
Zaponakis G. and Katerinopoulos H. E. Asymmetric synthesis of β-alkoxy substituted phenethylamine analogs 3045
Zappalà C. see Bravo P. 6005
Zaragoza F. Solid-phase synthesis of substituted 3-aminothiophenes and 2-methylene-2,3-dihydrothiazoles 6213
Zaragoza F. Corrigendum 7865
Zard S. Z. see Boivin J. 8735
Zard S. Z. see Denieul M.-P. 5495
Zard S. Z. see Laso N. M. 1605
Zard S. Z. see Liard A. 5877
Zard S. Z. see Quiclet-Sire B. 1397
Zard S. Z. see Quiclet-Sire B. 9057

Zavialov I. A. see Petasis N. A. 567
Zawacki F. J. and Crimmins M. T. A convenient synthesis of unsymmetrical, substituted γ-pyrones from Meldrum's acid 6499
Zefirov N. S. see Lermontov S. A. 4051
Zeghdoudi R. see Hanna I. 7013
Zehnder M. see Bolm C. 3985
Zelchans G. see Polyak F. 8223
Zeng L. Zhang Y. and McLaughlin J. L. Gigantransenins A, B, and C, novel mono-THF acetogenins bearing *trans* double bonds, from *Goniothalamus giganteus* (Annonaceae) 5449
Zeng X. Chen X. Cai J. Jiang X. and Gu Y. A novel aminoalkyl-decyanation of 4-pyridinecarbonitrile with imines: a facile selective synthesis of 4-pyridinemethanamines 3009
Zenk M. H. see Nasreen A. 8161
Zepeda G. see Nagarajan A. 6835
Zercher C. K. see Brogan J. B. 5053
Zercher C. K. see Cebula R. E. J. 8341
Zhang C. Moran E. J. Woiwode T. F. Short K. M. and Mjalli A. M. M. Synthesis of tetrasubstituted imidazoles via α-(*N*-acyl-*N*-alkylamino)-β-ketoamides on Wang resin 751
Zhang C. and Mjalli A. M. M. A combinatorial method for the solid phase synthesis of α-amino phosphonates and phosphonic acids 5457
Zhang D. Ghosh A. Süling C. and Miller M. J. Efficient functionalization of acylnitroso cycloadducts: application to the syntheses of carbocyclic nucleoside precursors 3799
Zhang E. see Maryanoff B. E. 3667
Zhang G. Farooqui F. Kinstler O. and Letsinger R. L. Informational liposomes: complexes derived from cholesteryl-conjugated oligonucleotides and liposomes 6243
Zhang H. and Chan K. S. Base effect on the cross-coupling of bulky arylboronic acid with halo-pyridines 1043
Zhang H.-C. Harris B. D. Maryanoff C. A. and

Maryanoff B. E.
High 1,6 diastereoselectivity in the hydride reduction of an acyclic ketone substrate via bicyclic chelation control 7897
Zhang H.-C. see Maryanoff B. E. 3667
Zhang H.-W. see Tso T. S. C. 9249
Zhang J. see Mayer J. P. 5633
Zhang J. see Mayer J. P. 8081
Zhang L. Anzalone L. Ma P. Kauffman G. S. Storace L. and Ward R.
The chiral specific synthesis of DMP 754, a platelet GPIIb/IIIa antagonist 4455
Zhang L. see Lau W. Y. 4297
Zhang Q. see Noé E. 5701
Zhang Q. see Noé E. 8823
Zhang Q. see Wang K. K. 4087
Zhang Q.-M. see Sugiyama H. 9067
Zhang R. and Madalengoitia J. S.
Conformational stability of proline oligomers 6235
Zhang S. see Galopin C. C. 8675
Zhang S. see Soderquist J. A. 2561
Zhang W. Hirao T. and Ikeda I.
Interesting and effective P,N-chelation of tetrasubstituted ferrocene ligands for palladium-catalyzed asymmetric allylic substitution 4545
Zhang W. Kida T. Nakatsuji Y. and Ikeda I.
Novel C_2-symmetric diphosphine ligand with only the planar chirality of ferrocene 7995
Zhang W. and Dowd P.
Double ring expansions: a new method for making medium and large cyclic ketones 957
Zhang W. and Taylor J. W.
Efficient solid-phase synthesis of peptides with tripodal side-chain bridges and optimization of the solvent conditions for solid-phase cyclizations 2173
Zhang W. see Robins M. J. 3921
Zhang W.-Y. see Flisak J. R. 4639
Zhang X. and Jones R. A.
A universal allyl linker for solid-phase synthesis 3789
Zhang X. and Ulrich P.
Directed approaches to reactive Maillard intermediates: formation of a novel 3-alkylamino-2-hydroxy-4-hydroxymethyl-2-cyclopenten-1-one ('cypentodine') 4667
Zhang X. see Angelis Y. 5991
Zhang X. see Jiang Q. 797
Zhang X. see Zhu G. 4475
Zhang Y. Wada T. and Sasabe H.
Synthesis of a new carbazole cyclic dimer via Knoevenagel condensation 5909
Zhang Y. see Bao W. 9333
Zhang Y. see Comins D. L. 793
Zhang Y. see Sánchez Peña M. 5841
Zhang Y. see Wang D.-K. 4187
Zhang Y. see Ying T. 3885
Zhang Y. see Zeng L. 5449
Zhang Y. see Zoretic P. A. 1751
Zhang Y. see Zoretic P. A. 7909
Zhang Z. Turro N. J. Johnston L. and Ramamurthy V.
Role of water in intrazeolite photochemistry 4861
Zhang Z. and Tang J. Y.
A novel phosphitylating reagent for *in situ* generation of deoxyribonucleoside phosphoramidites 331
Zhang Z. J. see Crowe W. E. 2117
Zhao B. see Brough P. A. 2915
Zhao B. P. Panigrahi G. B. Sadowski P. D. and Krepinsky J. J.
Syntheses of oligonucleotide–amino acid conjugates: using TentaGel and CPG matrices for the synthesis of 3'-phosphoryltyrosine-terminated oligonucleotides 3093
Zhao K. see Lau W. Y. 4297
Zhao K. see Sun L. 1547
Zhao K. see Xiang Y. 3779
Zhao K. see Xiang Y. 4877
Zhao Q. see Shultz D. A. 8837
Zhao S.-H. Miller A. K. Berger J. and Flippin L. A.
Synthesis of arylpiperazines via palladium-catalyzed aromatic amination reaction with unprotected piperazines 4463
Zhao S.-H. Ortiz P. R. Keys B. A. and Davenport K. G.
Asymmetric epoxidation of unfunctionalized olefins catalyzed by novel manganese–picolinamide–salicylidene complexes 2725
Zhao W. and Shine H. J.
Reaction of thianthrene cation radical with alcohols: isolation and chemistry of 5-cyclohexyloxythianthreniumyl perchlorate 1749
Zhao X. see Jung K. W. 6491
Zhao Y. see Gilbert P. 9115
Zhao Z. and Caruthers M. H.
Synthesis and preliminary biochemical studies with 5'-deoxy-5'-methylidyne phosphonate linked thymidine oligonucleotides 6239
Zheng B. see Myers A. G. 4841
Zheng G. see Kozyrev A. N. 6431
Zheng G. see Kozyrev A. N. 747
Zheng Y. see Bao W. 9333
Zheng Y. F. see Zamir L. O. 6435
Zheng Z. see Cheng J.-P. 1457
Zhong M. see Lin G.-Q. 3015
Zhong Y. Y. see Lorente A. 4417
Zhou A.-M. see Lin J.-M. 5159
Zhou C.-M. see Han Y. 3347
Zhou D. Sheik M. and Roth H. D.
Electron transfer induced deprotonation of α- and β-pinene: evidence for ring-closed vinylcyclobutane radical cations 2385
Zhou J. see Bao W. 9333
Zhou L. see Cho B. P. 1535
Zhou P. see Davis F. A. 3267
Zhou Q.-L. see Buck R. T. 7631
Zhou Q.-L. see Doyle M. P. 4129
Zhou R. see Gao Y. 893
Zhou S.-Z. Anné S. and Vandewalle M.
A practical synthesis of A-ring precursors for 19-nor-1α,25-dihydroxy-vitamin D_3 analogues 7637
Zhou W. Guo D. and Nes W. D.
Stereochemistry of hydrogen migration from C-24 to C-25 during biomethylation in ergosterol biosynthesis 1339
Zhou W.-S. see Liao L.-X. 6371
Zhou W.-S. see Xu Y.-M. 1461
Zhou Z.-Y. see Sakuda S. 5711
Zhu B. see Panek J. S. 8151
Zhu C. see Kozyrev A. N. 6431
Zhu G. Terry M. and Zhang X.
Asymmetric allylic alkylation catalyzed by palladium complexes with new chiral ligands 4475
Zhu H. J. see Dai W.-M. 5971
Zhu J. see Wagner B. 6557
Zhu X. X. Ding P. Y. and Cai M. S.
Studies on carbohydrates—XX. Synthesis of hexasaccharide containing lactosamine unit using glycosyl trichloroacetates as glycosyl donors 8549
Zhu Z. Lippa B. S. and Townsend L. B.
A novel photo-assisted annulation reaction for the synthesis of 6,7-dichloroimidazo[4,5-*b*]quinolin-2-one 1937
Zhu Z. and Townsend L. B.
Regioselective ribosylation of 6,7-dichloroimidazo[4,5-*b*]quinolin-2-one 3263
Zhu Z. see Gung B. W. 2189

Zhu Z. Tian W. and Liao Q. A practical procedure for chemo- and regioselective conversion of steroid 3-ketones into the corresponding enol sulfonates using 3-oxa-octafluoropentanosulfonyl fluoride 8553
Zhuang Z.-P. see Fortunak J. M. D. 5679
Zhuang Z.-P. see Fortunak J. M. D. 5683
Ziat K. see Fanni S. 7975
Zibuck R. see Rood G. A. 157
Ziegler F. E. and Petersen A. K. Tandem cyclopropylcarbinyl/oxiranylcarbinyl radical rearrangements: an entry into the prostaglandin B_1 series 809
Ziegler F. E. and Wang Y. Carbon–carbon bond forming reactions with oxiranyl radicals 6299
Ziessel R. and Suffert J. Stepwise construction of polyalkyne modules grafted on oligopyridine synthons 2011
Ziessel R. see Ulrich G. 8755
Zimmermann G. see Hofmann J. 2399
Zimmermann K. Goddard R. Krüger C. and Haenel M. W. 2,5,8,11,14,17-Hexa-*t*-butyldecacyclene and 1,7,13-/1,6,12-tri-*t*-butyldecacyclene: possible precursors for bowl-shaped polycyclic arenes 8371
Zimmermann P. see Bildstein S. 4941
Zink D. L. see Singh S. B. 8077
Zmijewski M. J. see Costello C. A. 7469
Zoghbi S. S. see Tamagnan G. 4353
Zöllner S. see Coudret J. L. 2425
Zoretic P. A. Chen Z. Zhang Y. and Ribeiro A. A. A radical prototype to steroids: synthesis of *d,l*-5α-D-homoandrostane-4α-methyl-3,17a-dione 7909
Zoretic P. A. Zhang Y. and Ribeiro A. A. An intramolecular radical approach to angular electrophores in polycyclic systems 1751
Zou R. and Matteucci M. D. Synthesis and hybridization properties of an oligonucleotide analog containing a glucose-derived conformation-restricted ribose moiety and 2', 5' formacetal linkages 941
Zubaidha P. K. see Chavan S. P. 233
Zubaidha P. K. see Chavan S. P. 237
Zubkowski J. D. see McMills M. C. 7205
Zucco C. see Rezende M. C. 5265
Zuckermann R. N. see Goff D. A. 6247
Zulaica E. see Amat M. 5217
Zulaica E. see Bennasar M.-L. 6611
Zupan M. see Stavber S. 3591
Zuurmond H. see Dondoni A. 7587
Zwanenburg B. see Bakkeren F. J. A. D. 8003
Zwanenburg B. see Thuring J. W. J. F. 4759
Zweifel M. J. see Rodriguez M. J. 4301

TETRAHEDRON LETTERS: Instruction to Contributors

For full instructions see issue 1 of this volume

Tetrahedron Letters is a medium for the rapid publication of short communications in English, French or German and offers maximum dissemination of outstanding developments in organic chemistry.

The Letters attempts to provide rapid publication of important **new** contributions. Communications may announce either experimental or theoretical results of special interest, and will be evaluated for their novelty, timeliness and general interest. In accepting papers, the Editors are guided by the opinions of referees who are chosen from panels of experts or from specialists in the community of organic chemists. *Authors are encouraged to suggest names of several experts in the field when papers are first submitted or at any time in the evaluation process.*

Referees are asked to distinguish contributions meeting the above requirements, and having an element of urgency, from otherwise worthwhile work which could more properly await publication in a complete form accompanied by full experimental details. Alternatively, as for example, where the main interest lies in medicinal aspects of the work, it may be preferable to publish the results in a more specialized journal.

When submitting a communication, authors must include a brief statement justifying acceptance.

The typewritten manuscript is reproduced photographically, and each communication is a separate entity. Authors are requested to send papers of 2 or 4 pages. Longer papers will not be accepted. Articles of 3 or just over 3 pages may be returned to the authors for shortening.

ABSTRACT

Authors must include a short abstract in English of approximately four to six lines typed in single line spacing and indented 2 cm at both left and right hand margins. This should appear immediately after the address and before the commencement of the communication.

GRAPHICAL ABSTRACTS

Authors are requested to supply a graphical abstract in triplicate in finished, camera-ready form at the time the Letter is first submitted. These abstracts should aim at presenting the essence of the Letter in a concise, pictorial form, useful for rapid scanning of the Journal and for the compilation of databases. Carefully drawn structural formulae are desired which serve to illustrate the theme of the paper. Appropriate text should be incorporated not to exceed the space limitations (5 × 19.5 cm). In publication, abstracts will be reduced by 25%.

PREPARATION OF MANUSCRIPTS

In the introductory section of the communication, the author should attempt to outline the significance of the work and the rationale for urgent publication. Where new general methods are described, typical experimental procedures should be provided.

Manuscripts should be typed in 1.25 or 1.50 line spacing using black ink on good quality white bond paper giving a clean, clear impression. Any good quality paper may be used, provided the actual typing area fills the space as outlined below. Papers should be composed on a word processor, or can be typewritten. For best results a laser or computer printer should be used (except band printers or dot matrix with fewer than 21 pins). **Two copies of the manuscript must accompany the original.**

The title should be in bold with the initial letter of each major word capitalized, and centred on the width of page 1 with the title at least 2 cm from the top of the typing space. After one line of space, the authors' names and addresses should be provided on separate lines. The author or authors to whom correspondence should be

---

Note: The contents of papers shall be the sole responsibility of the authors and publication shall not imply the concurrence of Editors or Publisher.

addressed by readers of the Journal should be indicated by an asterisk. Should the corresponding author wish to cite an Email address then this should be placed as a footnote on the first page of the manuscript.

The typing area of page 1, including the title, should be 18.75 cm wide by 24 cm deep. The typing area of all other pages should be extended to cover an area 18.75 cm wide by approximately 26 cm deep (which will fit on 8.5" by 11" paper).

CAMERA-READY REQUIREMENTS, FORMULAE AND TABLES

To maintain a finished, artistic appearance of the Journal, authors are asked to use whatever resources are available to them to produce manuscripts of pleasing appearance. Direct reproduction of camera-ready papers requires the author to provide the manuscript in a finished artistic format making the best possible use of the space within two or four completely utilized pages. If possible a system should be used that allows text and graphics to be integrated in the printout. Any materials that cannot be directly printed should be neatly glued in the appropriate place in the text just above the corresponding caption. Freehand illustrations will not be accepted. The size of formulae may vary according to the nature of the illustrations but these should be neither overpowering nor so small that they are hard to read after the usual reduction (by a factor of 25%). *Regional Editors may return otherwise acceptable papers for modification if the quality of the figures or structural formulae is poor or the overall layout is carelessly composed. Originals are preferred, but high-quality reproductions are acceptable if they are clear with good black and white contrast.*

HAZARDOUS COMPOUNDS

Authors are encouraged to draw attention to hazards by adding the word CAUTION followed by a brief descriptive phrase and literature reference if appropriate.

X-RAY CRYSTALLOGRAPHIC DATA

Manuscripts reporting X-ray Crystallographic data must be accompanied by lists of refined coordinates and bond distances with esd's for deposition at the Cambridge Crystallographic Data Centre [see Notice to Authors, *Tetrahedron* **1984**, *40(2)*, ii].

TRADEMARKS

Authors are required to acknowledge trademark protection in the standard fashion, e.g. Selectride®, Exaltolide® (although not for words which have entered general usage, e.g. pyrex, etc.).

REPRINTS

Any reprints required (above the 25 free) must be indicated on a form supplied by the Editor on acceptance of the paper.

MAILING OF MANUSCRIPTS

Manuscripts and graphical abstracts should be sent in triplicate directly to the Regional Editor for the particular areas as outlined below. **In order to achieve the most rapid publication time possible for communications, authors should FAX a copy (supplying their own telephone and FAX numbers) to the Regional Editor at the same time as they mail the camera-ready manuscript.** Papers sent to the wrong Regional Editor will be forwarded (causing delay) to the appropriate Editor as determined by the permanent address of the main author (indicated by an asterisk). *Where question arises, the area chosen should correspond to the laboratory where the work was performed.*

All authors must sign the 'Transfer of Copyright' agreement before the article can be published. This transfer agreement enables Elsevier Science Ltd to protect the copyrighted material for the authors, but does not relinquish the author's proprietary rights. The copyright transfer covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations, and includes the right to adapt the article for use in conjunction with computer systems and programs, including reproduction or publication in machine-readable form and incorporation in retrieval systems. Authors are responsible for obtaining from the copyright holder permission to reproduce any figures for which copyright exists.

(1) **Austria, Germany and Switzerland and all papers in the German language,** Professor W. Steglich, Institut für Organische Chemie der Universität München, Karlstr. 23, D-80333 München, Germany
Fax: 49 89 5469225

(2) **Contributions from the French-speaking area and all papers in the French language,** Professor G. Ourisson, Centre National de la Recherche Scientifique, Centre de Neurochimie, 5 rue Blaise Pascal, 67084 Strasbourg, Cedex, France
Fax: 33 3 88 607620

(3) **China,** Professor Lin Guo-Qiang, Shanghai Institute of Organic Chemistry, Academia Sinica, 345 Lingling Lu, 20032 Shanghai, China (manuscripts from Taiwan may be sent to Professor Lin, or to the usual Editor in Japan, at the choice of the authors)
Fax: 86 21 64166263

(4) **Japan, North and South Korea, Hong Kong and Macao,** Professor Y. Yamamoto, Department of Chemistry, Faculty of Science, Tohoku University, Sendai 980-77, Japan
Fax: 81 22 217 6784

(5) **North, Central and South America,** Professor H. H. Wasserman, Department of Chemistry, Yale University, P.O. Box 208107, New Haven, CT 06520-8107, USA
Fax: 1 203 432 9990

(6) **Papers from the Russian-speaking area,** Professor N. K. Kochetkov, N. D. Zelinsky Institute of Organic Chemistry, Academy of Sciences, Leninsky Prospekt 47, Moscow B-334, Russia
Fax: 7 095 13 55 328

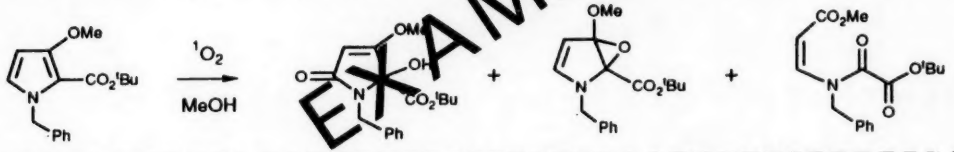
(7) **All regions other than those specified under (1)–(6) above,** Professor A. McKillop, University of East Anglia, School of Chemical Sciences, University Plain, Norwich, NR4 7TJ, UK
Fax: 44 1603 507773

LEAVE BLANK

Tetrahedron Lett. **1991**, *32*, 7571

SINGLET OXYGEN REACTIONS OF 2-CARBALKOXY-3-METHOXYPYRROLES. Harry H. Wasserman,* Roger Frechette and Vincent M. Rotello, Department of Chemistry, Yale University, New Haven, CT 06511 USA
Gayle Schulte, Yale Instrument Center, Yale University, New Haven, CT 06511 USA

Reactions of $^1O_2$ with 3-methoxy-2-carbalkoxypyrroles lead to 2,5-oxygenation, 2,3-epoxides, or 2,3-oxidative cleavage.



EXAMPLE

PLEASE TYPE ONLY WITHIN THE DOTTED LINES.

ELSEVIER
SCIENCE

ELSEVIER SCIENCE LTD
TRANSFER OF COPYRIGHT AGREEMENT

Scientific publishers and authors share a common interest in the protection of copyright: authors principally because they want their creative works to be protected from plagiarism and other unlawful uses, publishers because they need to protect their work and investment in the production, marketing and distribution of the article written by the author. In order to do so effectively, publishers need a formal written transfer of copyright from the authors(s) for each article published. We therefore ask you to complete and return this form promptly, retaining a copy for your records. Your cooperation is essential and appreciated.

Article entitled: _____

_____

Author(s): _____

_____

To be published in the journal: TETRAHEDRON LETTERS

_____

Effective upon acceptance for publication, copyright (including all rights thereunder and the right to obtain copyright registration in the name of the publisher, whether separately or as a part of a journal issue or otherwise) in the above article is hereby transferred throughout the world and for the full term and all extensions and renewals thereof, to:

ELSEVIER SCIENCE LTD

This transfer includes the right to adapt the article for use in conjunction with computer systems and programs, including reproduction or publication in machine-readable form and incorporation in retrieval systems.

Rights of authors

Elsevier Science LTD recognizes the retention of the following rights by the author(s):

1. Patent and trademark rights and rights to any process or procedure described in the article.

2. The right to photocopy or make single electronic copies of the article for their own personal use, including for their own classroom use, or for the personal use of colleagues, provided the copies are not offered for sale and are not distributed in a systematic way outside of their employing institution (e.g. via an e-mail list or public file server). Posting of the article on a secure network (not accessible to the public) within the author's institution is permitted.

3. The right, subsequent to publication, to use the article or any part thereof free of charge in a printed compilation of works of their own, such as collected writings or lecture notes.

Note: All copies, paper or electronic, or other use of the information must include an indication of the Elsevier Science LTD copyright and a full citation of the journal source. *Please refer requests for all uses not included above, including the authorization of third parties to reproduce or otherwise use all or part of the article (including figures and tables), to Elsevier Science LTD, Rights & Permissions Dept. The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB, England.*

ELSEVIER
SCIENCE

Authorship
If the article was prepared jointly with other author(s), the signing author has informed the co-author(s) of the terms of this copyright transfer and is signing on their behalf as their agent and represents that he or she is authorized to do so. Please confirm by checking the appropriate box following the signature line. The signing author shall bear the responsibility for designating the co-author(s) and must inform Elsevier Science of any changes in authorship.

If copyright is held by the employer, the employer or an authorized representative of the employer must sign. If the author signs, it is understood that this is with the authorization of the employer and the employer's acceptance of the terms of the transfer. Please confirm by checking the appropriate box following the signature line.

If the author is a U.S. Government employee and this work was done in that capacity, the copyright transfer applies only to the extent allowed by U.S. law and the author should sign this form. If at least one author is not a Government employee, that author should sign the copyright transfer form. Please confirm by checking the appropriate box following the signature line.

Warranties
The author(s) warrant(s) that the article is the author's original work and has not been published before. The author(s) warrant(s) that the article contains no libelous or other unlawful statements, and does not infringe on the rights of others. If excerpts from copyrighted works are included, the author(s) has (have) obtained or will obtain written permission from the copyright owners and will credit the sources in the article.

Preprints
The author(s) must agree that if a prior version of this work (normally a preprint) has been posted to an electronic public server, they will not update and/or replace this prior version in order to make it identical in contents to the final published version.

Signature of copyright owner(s) : _____ _____

Name (printed) : _____ _____
Title (if employer representative): _____
Company or institution : _____ _____
Date : _____

ATTACH ADDITIONAL SIGNATURE PAGE AS NECESSARY

If any of the following apply, please check the box(es):

☐ author on behalf of all co-authors
☐ employer representative
☐ employee of the U.S. government

Please retain a copy of this form for your files and return the original to:

ELSEVIER SCIENCE LTD
Attn. TETRAHEDRON PUBLICATIONS
THE BOULEVARD
LANGFORD LANE
KIDLINGTON
OXFORD
OX5 1GB
ENGLAND

CONTENTS DIRECT

Tables of Contents by e-mail

It's Direct
Too busy to surf the Net? ContentsDirect comes directly to you.

It's Free
ContentsDirect is provided as a service to individuals interested in our journals. There is no charge.

It's Pre-Publication
The Contents message will arrive directly on your pc approximately two to four weeks prior to a journal's appearance in libraries.

It's Easy
There is no training required. If you use e-mail then you can receive ContentsDirect.

It's Frequent and Regular
Every time a journal issue is published, it will be preceded by its own ContentsDirect update.

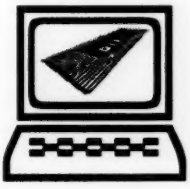
Which Journals?
For a list of ContentsDirect journals, please send an e-mail message to **cdhelp@elsevier.co.uk**

How to Subscribe by E-mail
Send a message to **cdsubs@elsevier.co.uk** giving the following information:

- Your name
- Your e-mail address
- Your full postal address and fax number
- The journals for which you would like to receive the ContentsDirect service.

How to Subscribe by Post or Fax
Send the information above to your nearest Elsevier Science office.

Journal contents pages delivered directly to your pc for free!
Don't wait for your existing contents service to catch up - sign up today!



IMPORTANT: ContentsDirect can be sent to your Internet e-mail address only. If in doubt about your Internet e-mail address, contact your institution's information technology/telecommunications department for advice.

ELSEVIER SCIENCE

Elsevier Science, Regional Sales Office, Customer Support Department,
655 Ave of the Americas, New York, NY 10010, USA
☎ Telephone: +1-212-633-3730 Fax: +1-212-633-3680

or

Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK
☎ Telephone: +44 (0) 1865 843404 Fax: +44 (0) 1865 843986

NEW AND NEWLY ACQUIRED TITLES FROM ELSEVIER SCIENCE

Aggression & Violent Behavior
Annales Françaises D'anesthésie et Reanimation
Auris, Nasus, Larynx
Cardiovascular Research
Current Advances in Clinical Chemistry - Diskette version
Current Advances in Cell & Developmental Biology - Diskette version
Current Advances in Protein Chemistry - Diskette version
Current Advances in Toxicology - Diskette version
Current Advances in Cancer Research - Diskette version
Current Advances in Applied Microbiology & Biotechnology - Diskette version
Current Advances in Endocrinology & Metabolism - Diskette version
Current Advances in Genetics & Molecular Biology - Diskette version
Disease Management & Clinical Outcomes
Drug Discovery Today
European Journal of Cardio-Thoracic Surgery
European Journal of Agronomy
European Electronics Markets Forecast
European Journal of Pharmaceutics & Biopharmaceutics
Filtration Newsletter
Fruits
Gene-Combis
Higher Education Policy
Information Security Technical Report
Journal of International Financial Markets Institutions & Money
Journal of Multinational Financial Management
Medical Update for Psychiatrists
Mutation Research - Mutation Research Genomics
New Astronomy
Parasitology International
Pump Industry Analyst
Transportation Research Part D: Transport & Environment
Trends in Plant Science
Trends in Cognitive Sciences
Vaccine Online

CONTACT YOUR NEAREST ELSEVIER SCIENCE OFFICE FOR FURTHER INFORMATION

For customers in the Americas (North, South and Central America) :
Elsevier Science,
Regional Sales Office,
Customer Support Department,
655 Ave of the Americas,
New York, NY 10010, USA
☎ *Telephone: +1-212-633-3730*
☎ *Toll-free for customers in the USA and Canada: 1-888-437-4636 (1-888-4ES-INFO)*
Fax: +1-212-633-3680
E-mail: usinfo-f@elsevier.com

Far East and Australasia (except Japan):
Elsevier Science Pte Ltd,
Regional Sales Office,
No. 1 Temasek Avenue,
#17-01 Millenia Tower,
Singapore 039192
☎ *Telephone: +65-434-3727*
Fax: +65-337-2230
E-mail: asiainfo@elsevier.com.sg

Japan:
Elsevier Science,
Regional Sales Office,
Customer Support Department,
9-15 Higashi-Azabu 1-chome,
Minato-ku, Tokyo, 106 Japan
☎ *Telephone: +81-3-5561-5033*
Fax: +81-3-5561-5047
E-mail: info@elsevier.co.jp

For customers elsewhere:
Elsevier Science,
Regional Sales Office,
Customer Support Department,
PO Box 211, 1000 AE Amsterdam,
The Netherlands
☎ *Telephone: +31 20-485-3757*
Fax: +31 20-485-3432
E-mail: nlinfo-f@elsevier.nl

ELSEVIER SCIENCE

CO7A05/p18

Printed in Great Britain by Page Bros, Norwich